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A SYNTHETIC GENETIC STUDY OF FEAR

By G. STANLEY HALL

CHAPTER II

III. *Psychic geotaxy*, or orientation to gravity, constitutes a distinct and fascinating theme of geneticism. Beginning with the tropistic level, it grows complex as we ascend the scale of life, and in man has many outcrops, conscious and unconscious, normal and morbid. Our protocol on this topic consists of questionnaire returns, letters, oral communications, notes from medical and other literature collected for sixteen years and embracing nearly three hundred individuals. Such data shed no light on the percentage of frequency of such phenomena, but although age is not always given, we can roughly estimate that some four-fifths of these cases are under thirty, and one-half under fifteen, that there are nearly three girls to one boy, and that save in a score and a half of clinical cases the reactions, although often very intense, are compensated and outgrown later. Again, while responses to the vertical direction are manifold, the factor of fear is predominant. Pronounced and persistent fear, too, is so obvious that while trained observers are desirable, the instructed lay reporter can furnish data of as real value as that accepted by students of heredity, clinical psychology, and anthropologists, although of course all such material needs to be sifted and weighed by the expert. The best method of presenting data like the above cannot be very exact, for tables and curves would involve too many arbitrary distinctions, but must consist of mosaic, of salient sample instances that outline a composite portrait of the chief traits involved and bring out

type cases. Of course the adequacy of such a general picture depends confessedly much upon the psychological sagacity of the compiler. The following, then, is a characterization of my data, the best I can make in the space.

Young people often remember vividly the experience of being tossed, perhaps high to the ceiling and being caught, or of being trotted high on the foot or knee, or the baby jumper. Occasionally this seems to be the very first memory, and sometimes it is the only thing remembered of a dead grandparent or other early acquaintance. It is always exciting and nearly all children love it up to a point (varying greatly with the extent of the movement, who is responsible for it, a trusted friend or a stranger, and especially with the diathesis of the child), beyond which it becomes a fear or perhaps a terror, causing shrieks and even convulsions, making the child forever after hate or fly and hide from those who toss it. For some it has a unique charm and those who can do it are persistently importuned. Most children love to be high, although two were reported who before the end of the first year (it was said, improbable as it seems, with no experience of falling) could not even be lifted to a high chair, a table, or be carried. Infants, too, are instinctive climbers, often getting up stairs before they can walk; they cling to hair, beard, clothes, almost convulsively to save themselves from a fall. Immediately after birth, as Robinson showed, they can often support their entire weight by clinging to a cane, a power soon lost but which suggests arboreal life. The desire of climbing trees, fences and every accessible high object, and also that of jumping down on soft places like haymows is in some children remarkably intense and prolonged. Falls, on the other hand, may give an absurd dread of even small heights and set back a child's courage to walk weeks and even months. Trettien (Am. Jour. of Psychol., v. 12, pp. 1-57) in tracing the processes by which the child acquires the upright position and especially Mead (Ped. Sem., v. 20, pp. 460-84) have shown that the power to stand and walk involves a marked advance in the power to talk, in general intelligence, also in courage and independence. The first step may reveal any symptom of the height complex, charm, dread, respiratory, cardiac, muscle-tonus and even stomatic phenomena. Not only a fall but illness or sudden fright or consciousness of what it is doing may cause the child to react by creeping and hitching for weeks or months and thus lay the basis of height phobias later. Our data suggest that any sharp check of the infant's instinct to get up on end constitutes an obstacle to learning to be at home in great heights which may be compensated, but even then may leave the adult with greater liability to those peculiar panics that sometimes seize those who work at great altitudes. Teetering, swinging, spring-board leaping and diving, elevators, balloons, and even an aeroplane experience are found in our data. Some cannot bear to step on gratings, and two had a fixed and acute dread of cracks, one between paving stones and the other of those in clay where mud had dried, which latter suggested earthquakes or "the way in which proud Korah's troupe was swallowed up." Very common is the impulse, usually very sudden, to hurl oneself down from towers, windows, roofs, bridges, high galleries in church or theatre, precipices, etc., and not a few grew rigid, livid, clenched their hands and teeth, clung almost convulsively to railings or bystanders, or had to be held by their

friends from plunging off in order to escape the tension by "ending it all" or "to see how it would feel" to fall or get the "beautiful sensation" of it, often in the hope of being upborne by their clothes, a parasol, flapping hands or arms like wings, or some absurdly planned but inadequate device, trusting luck to "strike in a soft spot," etc. The pure suicide motive in these cases is often a sudden eruption, it is such a good opportunity to die and have it all over in a moment. There is little doubt, however, that this jumping off instinct in the young and old may lead to death without any real plan of suicide. There is sudden giddiness, nausea, tremor, gasping, or sense of smothering or a deep inspiration which may be a sudden revival of an habitual dream or nightmare experience of hovering and floating, and in certain cases a firm conviction that respiratory phenomena are the cause of the levitation. Some describe an alternating flicker of fascination and horror, and the impulse to jump comes, as it were, in the trough of the wave of charm. Some are cool at the time, as one was on the top of the Eiffel tower, but had an acute attack of shudders in recalling it later. Several described dread of going to heaven because it was so high and described how their horror of hell was that they were always falling. Several who had dreamed of flying often and had come to find it pleasant, grew to feel sure well on into the waking state that by a peculiar intake and holding of breath (such as fakirs use to hypnotize themselves for weeks, as if they were dead) they had learned the secret of ascension, and two planned dramatically how they would startle their groundling friends and an awe-struck world by their discovery. The writer has had repeated similar experiences. Some who were never known to get up in their sleep feared they might do so and took precautions every night, one girl tying her wrist to the bedpost lest she should leap out of the window in a dream. Well terrors are common and some children for months and years can never approach wells or a certain one, perhaps believing it bottomless. This is connected with various well myths. Some for a time have a morbid dread of hills, and a few even of very slight acclivities and declivities. This, too, often appears in the myths connected with famous mountains. So stairs have a fear psychosis of their own, perhaps usually associated with painful infantile experiences, and which often cause absurd precautions or fantastic modes of going up and down. Skating and walking in slippery weather may become intensive fears embroidered with manifold fancied accidents. Many cannot ride horseback and a few will not trust themselves in a vehicle lest they fall out or the bottom of it fall out or there come a tip-over. Three of our subjects speculated about reversed gravity and had spells of fear that they might drop upon the world or fall off at night when it was upside down. Sometimes such fears are stronger for their friends than for themselves. Closely akin, too, are the manifold fears that things will fall on us, such as meteors, stars, comets, clouds, sticks of spent rockets, rocks if we are near a precipice, chandeliers, ceilings, books from church galleries, steeples, signs on the street or over store doors, belfries, towers, etc.

After making all possible allowance for exaggeration and every other source of error, such data lead the insightful student of childhood to the conclusion that these fears are far more common and intense while they last, even with normal children, than has been supposed, even though they be very

fugitive. Again, they are often supposedly kept secret (although easily betrayed) from adults for fear of ridicule or censure. They seem most pronounced in girls. If yielded to with the abandon of the present moment, so characteristic of childhood, they often seem to die out of themselves, without very great effort at compensation. Still the devices for concealing them may be very subtle and ingenious, and the child with acute dread of wells, stairs, upper stories, and the rest, may devise an intricate system of defences and excuses, such as preoccupation, lameness, whim, convenience, etc., to avoid experiencing or betraying these dreads. Newborn infants which I have tested in a lying-in hospital, with no possible experience of falling, showed unquestionable physical signs of fear when lifted up and down on a cushion, and we may infer that all the subsequent hurts from falling only modify an innate orientation to gravity, which birds must be born with or they would fall over the edge of the nest.

In the act of falling through space the pressure of all organs on the tissues that support them is removed, and in being lifted upward all the normal pulls and pressures are increased. Changes of the pressure of the content of the stomach upon its base, which may cause nausea, also changes of the fluids of the semi-circular canals connected with vertical giddiness; of the brain and other organs or their supports, of the five or six foot column of blood upon the walls of the blood vessels, the absence of these in falling and their increase in rising, modifications of ocular and auditory sensations, cessation or augmentation of pressure against the soles of the feet, the podex or other dermal surface, in lying down:—all these are factors of essential although very varying value. Clinical cases teach us that with anaesthesia or with hyperaesthesia, and in some diseases of the eye and ear, may go marked sensations of levitation or heaviness, which are also modified even by changes in muscular vigor. The feeling of weight or lightness is thus a very changeable ground tone of many somatic impressions, too complex and too far submerged to admit of more than partial analysis as yet. The end of every drop beyond a certain height also is a hurt, and every individual acquires a plexus of these experiences, but the intense degree and the marked manifestation in some cases of the ambivalent charm-dread of up and down movements points unmistakably to a large inherited factor, and suggests that not only the experiences of the human stage of life but arboreal life among springy branches, when a fall meant death or serious mayhem, or possibly rising or falling in an aquatic medium

have left their traces in some kind of mnemes or engramis. The pelagic stage of life of our forbears was certainly far longer than the dendritic stage, and the latter was probably far longer than that of life on terra firma. True, we can identify no organs that mediate these experiences and can only postulate some kind of psychic ids or determinants, but the inflation of swimming bladders in rising and the evacuation of air from them in sinking, and the gasping or suspension phenomena of respiration in dreams or even fancies of hovering, the soporific effect on infants of gentle vertical movements, sometimes even with the cradle lullaby of "Rockabye, baby, among the tree tops," the climbing, clinging instincts of children suggestive of monkey life, suggest that, after exhausting proximate and individual causes before having recourse to remoter racial ones, the former fail to explain the normal and far more so the abnormal phenomena in this field, which current psychology has so ignored, but which geneticism can never do in any field. The facts seem to suggest that hovering (anakataesthesia) is to be distinguished from falling sensations (or eluaesthesia), which are later, the former being vestiges of aquatic, the latter of arboreal life. Of course the older of these experiences is to some extent reproduced in the foetal state with nearly equal fluid pressure on all sides, to which embryonal stage psychoanalysts (Ferenczi and others) have of late had recourse. Our ancestors floated and swam long before they had limbs, and they breathed by gill slits, which the foetus reproduces long before the development of lungs. If we have here phenomena which suggest different modes of movement before limbs, and of breathing before lungs, why should this seem more surprising when it occurs in exceptional cases, than the persistence of rudimentary organs or their hypertrophy in monstrous births? To doubt it is to conceive the soul as more limited in its backward range than the body, if not, indeed, to think too meanly of the former. Although we cannot demonstrate rudimentary processes in the same tangible way that we can rudimentary organs, may we not in fact have before us here some of the very oldest elements of our psychic life, reminiscent echoes of the primeval sea, on the one hand, and vestiges of dendritic life, on the other, a pristine outcrop of the factor of the space sense itself? If not by recourse to phylogeny how shall we explain either the hovering or the falling phenomena, the innateness of which seems now beyond all doubt?

In learning to stand and walk the child rapidly repeats a long stretch of racial history. Up to an average of about

twelve months it creeps in many ways, forward, backward, sideways, also hitches, rolls and crawls, and even after it has just learned to walk may, if in a hurry, revert to creeping, or if in a great hurry, to the still more primitive and still faster method of rolling. The first standing and stepping are almost always unconscious, with the desire to get something, as we throw better if we fix our attention, not upon the movements but upon the target. Consciousness of what is being done, attention of others called to the act, a little surprise, a fit of laughter or of anger, looking out and up and realizing how high they are and what a view they command, and thus getting a little dizzy, may often cause children at this stage to suddenly fall. Their automaton can walk; their mind cannot. A bad tumble, an illness, a long journey when it must be chiefly carried, mental fatigue or discouragement, may set it back for weeks or even months, so that it must learn to walk over again. After a sickness the child at this stage often manifests great surprise that it can no longer stand or walk. A few babies in our record can first stand or walk in one place only, or perhaps only for some single purpose, but diversion is almost always necessary for the first step. Some at this stage can walk only if they clutch their own dress, as they did that of their mother when they took their first step. One could walk only if it put on its father's cuffs, which it reached up to in its first successful effort to stand. Successful standing often seems to give a certain familiarity with heights and to prompt to still greater ones, so that the climbing instinct which precedes walking may be reënforced. The first successful efforts to stand and walk bring much elation. The very excess of joy at it may cause the toddler to go down. Many records show marked improvement of temper and still more of health. The sum total of exercise is greatly increased, and so fascinating is the new balancing performance that the child often indulges it to the point of fatigue. The range of interests widens. The arms are now suddenly freed from the work of locomotion and are flung about in joy or used to maintain the equilibrium, and there is almost always a strong instinct to put them to use by carrying things. The habitual line of vision is now horizontal and higher. There is a marked access of courage, venturesomeness, and interest in things distant. Indeed the child who has learned to stand and walk enters upon one of the chief prerogatives of man's estate. It is an accomplishment which involves many complex coöordinations and many changes in the incidence of strains and pressures in all parts of the body. The head is now balanced on

a vertical column and not carried by the muscles of the back. The shoulders, which have been pushed back by normal creeping, are now supported, as is the weight of the arms, by the bony structure, the weight of the viscera presses downward, the hips and knees, hitherto almost always flexed, are now straightened, and many other far-reaching physiological changes occur.

In a large anthology of cases of loss of the power to stand and walk in adults, which have been collected mainly since about 1888 (for the disease seems to have been unknown in antiquity), we have many very striking analogies with the stages of learning to stand and walk, though after a comprehensive inspection of the literature I can find no recognition of this inverse correspondence. *Astasia-abasia* might almost be described as unlearning to stand and to walk. Nearly all its symptoms in children are found (in a smaller and more obscure way, as must be the case in their undeveloped lives), in attaining the upright position and the power of locomotion; or conversely expressed, the symptoms of the disease in adults are more pronounced, more prolonged, and more isolated than in the process of ascent in children, and the order of their occurrence is often inverted. The patient dreads a wide outlook, so that this disease is very often intimately associated with agoraphobia. Even standing, and still more, walking, may cause flushing, palpitation, giddiness, timidity and tremors, very like the first success of the child, and in both we have a similar propensity to stagger and to clutch at anything for support. We have the same ability to both stand and walk unconsciously and unnoticed, and the same collapse upon sudden realization of what is being done. In true *astasia-abasiaphobia* there is the same intactness of muscles and reflexes, strength, spinal centers, and perhaps the same power to make all the walking movements when lying down.

The typical syndrome of this phobia, according to Delarme, whose characterization of it is the best to date, is a systematized functional paralysis of standing and walking engendered by an emotivated idea of the impossibility of these functions, existing in various degrees and sometimes, though not necessarily, accompanied by lesions of the locomotor apparatus. The lower centers may be normal. The fact that such patients can walk when their attention is distracted from the act shows that the thalamic and probably the Roland centers are not affected, but that the trouble lies in the higher, psychic regions, some think in the center of Grasset. Knapp describes a form of fear which he calls intention psychosis, and one without fear which he calls an association neurosis. There may be *astasia-abasia*, with no fear, a distinction that Sainton stressed, but at least alarm at this condition, which is of course from dread of the act, is almost inevi-

table. The obsessive idea that the patient cannot walk soon arises. Its onset, if not due to an accident, is rarely sudden, but muscular atrophy slowly supervenes and cure is unusual and very slow. It is not aboulia, as Magnan thought, and is rarely *Schrecklähmung* or of purely nervous origin, as Binschwaner opined, even though a fall may occasion the outbreak. Recent studies have laid more and more emphasis upon the psychic elements of this disease. Sometimes the memory images of how to walk seem to be lost. In some cases these are intact but the patient stands and walks only if in a narrow street or if there are no people in sight or none look at him, or he sees no one he knows, or he may go down only if spoken to. One patient had read of a case in which the bones grew so brittle that they broke under the strain of standing before a mirror, and so developed a phobia of a similar catastrophe for himself. In one oft-cited but suspicious case, a hypochondriac who thought his limbs were made of glass, fell, said "Smash," and died. Even in its slightest degree there is always a loss of buoyancy and indeed of all its symbolic meanings that tiptoe upward and in their place a feeling of more or less heaviness or depression. The posture is almost always stooping or crouching, with hands and arms tense, the feet spread, the movements clumsy, involving mainly the fundamental and but little the accessory movements and muscles. The act of standing and walking is performed only with exhausting effort and is innervated in an abnormal degree from the higher centers, with much overflow of energy expressed in increasing tensions. Very rarely are there distinct ataxic or spastic movements of the hands or feet, and these probably never occur unless lower centers are involved. This loss of the power to stand and walk may be purely hysterical or the result of suggestion, and the symptoms are of all degrees and may be grafted on almost any lesion of the locomotor apparatus, though the element of fear and dread in some form is very rarely absent. As the disease advances we usually have a limitation of intellectual interests and even of the use of language, reversing the augmentation of these, which, Mead showed, followed in the child the power to walk.¹

Is the acute anxiety of these patients too great to be explained by the loss or impairment of this very fundamental power, and, if so, may we here assume an atavistic reënforcement from arboreal experiences? In tree-tops the upright position with the arms flared about like balancing poles brought dangers of a disastrous tumble. The risk of walking upright along limbs without holding on with the hands was of course in part, at least, compensated by the prehensile

¹ Strohmayer, Über das Symptom d. Astasie-Abasie. Monats. f. Psychol. u. Neurol., Bd. 12, pp. 315-28, distinguishes four types of abasia-astasia: (1) unconscious or hysterical, coming often as a surprise; (2) hypochondriacal or resting upon the conscious delusion of inability, occasionally with paraesthesiae and hyperfatigue, disturbances of vision, palpitation; (3) affective or due to anxiety that has no content and that is indefinite, like agoraphobia; and (4) imperative where when a patient tries to stand or walk he is seized by the idea that he cannot or must not although quite conscious of the absurdity of the idea, which is quite in contrast with the case in (2) above.

power of the foot and perhaps the tail, both of which were lost when life on the ground began. The use of these powers would render the animal secure when stationary, but in rapid movement, as from one tree to another (which Wallace observed in ourangs might sometimes reach the rate of four miles an hour), safety involved much and pretty constant handwork, with considerable foresight as to which branch to choose for a path to the next tree, and often with considerable risk of falling. The locomotor efforts of patients with abasaphobia, with their stooping and straddling, waving of arms, clutching of hands, constant incipient falling and recovery, the anxious fore-looking for the next few steps, the selection of a goal and the staggering toward it, and especially the impulse to grasp everything supportive in their way, are highly suggestive of tree-life. The same is true of the agoraphobia symptoms. The tree-climber just getting down to life on earth has only too much reason for new fears. Above it was secure from most of its enemies, save tree-climbing serpents, which all apes dread (a fear which often persists with morbid intensity in man). On earth safety by flight or speedy recourse to a tree was the only salvation from danger which might arise in any direction. So the agoraphobiacs skulk near buildings, with flitting fancies of taking refuge to steps, climbing to porches, open windows, up pillars, or it may be cliffs, flag-poles, on high walls or fences, or performing other yet more impossible feats if emergencies arise. Hand and arm movements seem often to go with these wild fancies. In the first terrestrial experience the arms, if unused in locomotion, are generally useless except for carrying the young and in manipulating food. Their very size and weight, greater in anthropoids than in man, changes the center of gravity and endangers equilibrium, unless they are waved to steady tottering steps, a function for which their very length would make them more effective than the human arm. I cannot find in all the copious literature that a true case of astasia-abasia has been subjected to psychoanalysis, and until we have a collection of cases thus studied the final demonstration of the above thesis must wait. As to the symbolism of hysterical dread of falling, explained as really dread of falling into sex-error, even if we grant that such cases occur, we must remember that the psychosis of falling long preceded, so that we really have here only a late graft, made in the autistic level, and the symbolism is hardly more than a figure of speech, such as uprightness, downrightness, altitude, plunging, and many more. Man's interest in the vertical dimension of

space, in zenith and nadir, in the heavens and in the depths of the earth, would perhaps never have been possible, had he been a quadruped, however philosophical.

IV. *Fears of losing horizontal orientation.* The instinct to know "where we are at" is very fundamental. One of its simplest, and from questionnaire returns, one of its most common manifestations, is found at all ages, but especially in childhood in suddenly awaking from deep sleep with a sense that we are lost. Our data abound in cases where children awake and cry out because they cannot tell where they are, whether in bed or not. Some are speechless or motionless if they awake crossways or diagonally in bed, and think they have been carried elsewhere. Sometimes when they have rolled out on the floor they creep around to find the bed or anything else and perhaps are dizzy and sick with fright. Some awake with a sensation of being in the wrong bed, that the windows are misplaced or that the furniture has been moved, and the feeling of being turned around gives them a panic. Some are nauseated if they cannot instantly locate familiar objects in the room when they wake. Sometimes they are aroused from a dream by a sense of being surrounded by thick walls and with a sense of suffocation. This is more common when a child sleeps in a strange place. This experience may be very acute and oft-repeated for years and then gradually die out. It seems to be rarely connected with antecedent dreams but more with some slight convulsive experience, and this suggests *pavor nocturnus* or night terror, of which very likely it is a highly specific form. In most of our cases, however, there seems to be no physical shock but a sudden feeling of being lost in an utterly strange place, and it is mitigated by sleeping with others. Whether, like *pavor nocturnus*, it is more common during dentition, or with a neurotic heredity, or with a predisposition to epilepsy or hysteria, or an irritated condition of digestive organs, cannot be determined from our data. The child very rarely screams or snatches wildly at things, or makes frantic defensive movements, and there is rarely any sign of catalepsy or either eclampsia or eclipsis, but the child usually soon re-orientates itself and falls asleep with little recollection of the experience in the morning. Childish dreams of being lost are not infrequent. They seem to grope in strange places among strange faces, and seek in vain for anything familiar. These phenomena are far more common in children, because of their very limited acquaintance with persons and places and their greater dependence upon them, and perhaps their more intense gre-

garious nature because of its limited range. Young animals prematurely separated from the nest or home prepared for them by their parents experience this same shock of strangeness and its results are dangerous and often fatal. In a few cases this experience was connected with the child's suspicion that its parents wanted to get rid of it or that it was supposititious.

Some nervous children can, with great difficulty, learn to sleep in a strange place, and must have their own bed in its own wonted place. Some are long haunted with the fear of being lost if they are at all off their own familiar beat. Perhaps they dread they shall lose their way to school, can with difficulty learn to go cross-lots unless they can see the goal, hesitate at every turn lest they may take the wrong road, are dizzy where they must turn a curve or a corner, and painfully try to keep tab on all the angles or perhaps dread they shall get in the wrong classroom. The smallest forest and perhaps even the word "woods" may arouse peculiar dread. Some children cling almost frantically to their mother when they turn any angle. Some cannot go off with their mates because of the incessant fear they should hide or be lost for an instant. A few who had seen little of outdoors until three or four found the wide, wide world oppressing and overwhelming, could only venture a few feet from the door, and could attend only to distant things, which to children very rarely can be made to excite interest, with pain. A few show an interesting ambivalence between this dread and the passion for running away. Some children, soon after they learn to walk, start off dropping perhaps first headgear, then coat, footgear, and wandering on and on as if all psychic anchorage to home had been lost. The sense of being pursued makes them go both faster and farther. Then in some cases after a painful and prolonged experience of this kind the opposite feeling of timidity at being any distance from home, supervenes. It would seem in our returns that ambidexterity often involves difficulty in telling right from left, and thus intensifies the obsession of corners, at which some children pause and hesitate lest they get turned around. More are obsessed by dread of losing the points of the compass. A college professor was unhappy for a year in Berlin because east always seemed west, and the sun went the wrong way. A few awake in some anguish until they know which way is north, and one had a chronic dread that this loss might come suddenly and stunningly. Some dread it most acutely in a forest, others in the country, and yet others in the city. It may suggest the fear of dying alone or of starvation. Some must have in hand, or at least in mind, a map of every new place, or they get confused. A very intelligent farmer had never been but twenty-two miles from home because he disliked strange places and people, thought he might get lost, and was certain he never could sleep save in his own bed. Some rather curiously "realize eternity" and think on the end of time, space and the world. In one case this brought weakness and palpitation, serious thoughtfulness, and a ritual of Bible verses and hymns was developed to lay this strange obsession. One experienced creepy feelings whenever the thought of vastness came upon him, until at twenty a reaction came and he thought he believed in annihilation, brooded over the idea of being universally diffused at death, and thus overcame his

fear. There can be but little doubt that children's dreams of place are very vivid, so that in passing either way between sleep and waking the environment of one melts either suddenly or gradually into that of the other. "Where am I?" is often one of the very first questions of morning consciousness and sometimes we see strange oscillations and mosaics of these states in hypnagogic phenomena. Everything in the room may be a lighthouse or buoy to guide them into safe harbor from their far dream voyages and so cannot be moved without confusion. Much depends upon the suddenness of transition into the waking state. Children differ immensely in the speediness and certainty with which they learn their environment, and probably even more so in the vigor and courage with which they explore it. Some timid home-clingers almost suggest an atavistic relapse toward the early forms of sessile life or attachment to the parental body, and remind us how slow and late in the animal series well-developed locomotor organs arose. Over against this stands the running away, migratory instinct, so common in fishes, birds and nomadic races, also the spring fever which is so intense in northern peoples after their long winter, when they feel they must be up, out and away, a trait which Holmgren has so well described, which has cropped out in the great human migrations, and the *scholares vagantes*, to say nothing of tramps, explorers, globe-trotters, etc. The primitive eye, ear and nose, at least, are in part organs of orientation to direct movement. The earliest infant memories show that the natural configurations of even slightly rolling ground, and especially of salient landmarks are among the earliest and most persistent of all forms of memory. Closely connected with this are all the phenomena of nostalgia or homesickness, which is so very complex and has never yet been analyzed, but to the strange anchoring power of which memories of persons, buildings, landscapes, food and feeding, contribute factors and to which striking geographical features certainly contribute, and which seem less in those wonted to desert or prairie. As to the function of ambixterity, distinguishing *p* from *q*, may cause dizziness, although *p* and *b* are easily distinguished. We do not know whether those least ambixterous most tend to walk in a circle.

Certain it is that the danger of getting lost in primitive tribal life must long have been very great, and it must have prompted to a very careful study of all landmarks, not only on the earth but in celestial regions. Early man was surrounded by *terra incognita*, which his fancy peopled with all sorts of horrors, and we doubtless have in the above experiences phylogenetic elements from this period. Animals, the axis of the body of which is horizontal, very early orientate between head and tail directions, as cephalization and forward movement increase together and with them the sense of from or toward whatever is localized. This orientation must have been a very primitive factor in the development of space feeling. When the erect position was assumed, however, it became far easier to turn about on a vertical axis and to feel turned about, and thus horizontal orientation became harder. Finally, cosmic dizziness, or fear of disorientation in regard

to the direction in which the solar system is moving, seems to go with a sudden and intense vastation of the ideas of the size of the universe and is doubtless connected with the infinity psychosis. This is not uncommon in the teens, when some have distinct agoraphobia at the thought of spatial infinity, while the claustrophobiac type of mind is relieved to find open spaces between the stars, or hopes that space is a void instead of being full of ether. Some connect this with a Nirvana impulse or the Indic cult of cooling passion by sitting crosslegged and saying "Om," or the intellectual appetency for pure and undetermined being. (See this subject more fully treated in my "Adolescence," v. 2, pages 159 *et seq.*)

V. *Fears of closeness.* These are somewhat more specific and here our data are yet more copious. Many children remember with great horror some experience of being shut up in a dark closet or a chest, or a room alone. A group of Western boys made a cave, with turnings, nearly sixty feet long and with many sinuous and labyrinthine turns, and initiated other boys by leading them into it and then deserting them till the terror of even the bravest was so great that adults had to intervene. To some the least sense of confinement is stifling. Some cannot endure closed carriages or small rooms, must have windows and doors open, can never enter a strange room if the key is on the outside, etc. Sometimes when shut in a room the sudden feeling that the door is fastened springs up. A few will never allow a carriage door to be latched but keep it slightly open on some pretext. Children who have had acute experiences of being shut up may have desperate dread of all narrow places lest they crush. Some dread fog and shudder lest it may grow a little heavier, clearer, denser, and finally choke them, or are haunted by fear of gas and go around every night to see if every jet is off. A child at three first noticed mist and was terrified, thinking God had spread a veil over the earth that would never lift. Other children feel nausea, asphyxia, think the sky is falling, in a fog; some have similar fears of suffocation at warm weather and perhaps their every thought of death is strangulation. Long is the record of fears of being buried alive, with accounts of horrid distortions of bodies dug up that have come to life. To some anything snake-like suggests coils about the neck and choking. Some awake before daylight and fear the sun will never rise. Occasionally we have a record of a child who cannot even sit in a corner. Others have phobias of all caves, ravines, gorges, dense forests so that they cannot draw a full breath. Others woke up with the bedclothes over them and

this has occasioned claustrophobic symptoms. Some dream of being screwed down in coffins and awake in a cold sweat. A boy in the teens wrote out minute details for his burial in case of death, and not a few want tools or food or drink buried with them, the coffin padded at the bottom, large and roomy with holes for air, with a tube so they can speak and breathe, a bell fastened to the hand, etc. In a few cases even a very strong odor brings a hot, close, smothery feeling. One cannot wear a ring unless it is very loose, and if it sticks the least bit in coming off she is in a panic. One can never even have a medal hung around her neck. One cannot even hear or read such words as suffocation, strangling, hanging, oppression, confinement, tyranny, constraint, and is occasionally overcome by them suddenly when night is falling. One after a slight trance, in which he heard all that was said but could not move, was for years obsessed by the dread of being buried alive, but this was compensated by the thought that God, who had cured that spell, would not let him die in another. One found her eyes slightly stuck together on awaking, and had a panic that long persisted. Boys often have a horror of getting their heads in chancery in a fight, getting sat on or crushed in a football scrimmage, and to some the dread is like that of losing their liberty, as in the case of a colored boy who, when choked in a fight, cried out with Patrick Henry, "Give me liberty or give me death." Thus we doubtless have in these experiences the basis of a very elaborate symbolism vitally connected with man's passion for unrestricted liberty.

Hunger for breath, which begins with the first filling of the lungs after birth, demands considerable room for air, and this increases with age and restriction of it causes incipient asphyxia. Even slight dyspnoea predisposes to claustrophobic states of consciousness, although any association of apnoea and the over-saturation of the blood by oxygen does not, so far as we know, dispose to agoraphobic symptoms. In all these deep-lying analogies of sensation, which seem better illustrated in sleep than in waking although with laws common to both, the state of the lungs, blood or heart, seems to suggest the concept, more often in dreams, while the reverse appears to be more characteristic of the waking state. Breathing is a specialized form of skin respiration and arose from it. It takes longer to strangle young than adult animals, and this would probably be also true of man. Some children habitually sleep in closed rooms and even with the head under clothing on account of fears of darkness, and this

may predispose to claustrophobia later or at least to the sthenic smother effects and even globus to which shut-in experiences predispose. Very faint and remote suggestions are often sufficient to evoke its symptoms, a valley, fog, warm weather, a snake, odor, a word, the thought of tyranny; and all this shows the immense range and power of the symbolism here involved and how our highest ethical aspirations are those that strike their roots deepest into the most primitive experiences. The very interesting and sudden impulse of prisoners long confined to break out, run amuck, smash things or their own heads and fists, the vagaries of certain ventilation cranks, the psychic torture of being compelled to remain too long in closed spaces, reverisons to tents instead of walls, mountain fever and its inspiration, root here. Sully Prudhomme wished the world was not round but stretched out infinitely and was continuous with stars and sky, so that we might travel to them if we took time enough. He found the limitations of living on a sphere oppressive. One might construct a more or less accurate measure of these sensations somewhat as follows: the subject might stand safely based on a high steep pyramid or even a tower or pillar, and an umbrella-like horizon might be opened with its apex just below his feet, till midway it made a flat horizon all about him. Then it might gradually rise, closing upward, till without moving he was in a pit. Thus we might measure in degrees where claustrophobiac and agoraphobiac symptoms began. We can hardly conceive aquatic creatures to have these experiences save at least in a low degree. Air-breathers really require many times the cubic contents of their bodies in air for respiration hourly, and this, like other of the above elements, may have been a factor in the early development of the spatial qualé, perhaps *a priori* to the sense of sight or even of touch. Certain it is that orientation in a space is exceedingly complex, and it is probable that when analysis can penetrate a little farther we shall leave Berkeley, Kant and modern epistemology far behind and make room for genetic factors of space perception not hitherto adequately considered but which will open up the problem of the *Ding an sich* of space perception to a larger if less formal treatment.

My suggestion in 1896 of a phylogenetic root of both agora- and claustro-phobia, which has been adopted by Mercier and others, was as follows:—that it was once very useful for our arboreal ancestors to be near tall objects, predominantly trees (to which modern tree-dwellers have again had recourse),

and which has perhaps left other vestiges in the form of tree-worship, folk-lore, myth, and the very unique feelings which children have for trees (see *Dendro-psychoses*, by J. O. Quantz, *Am. J. Psy.*, 1898, v. 9, p. 449), and that the latter phobia harks back only to a much later period (and is hence more common) of the troglodytes. This is at least in line with the present strong genetic trend of modern psychiatric thought. When from the high, breezy, prospective trees our forbears took refuge in dark, smoky, and probably unwholesome caves with perhaps only a single exit, so that escape from danger had to be not by flight but by fighting, the contrast was extreme. Gelineau thinks that agoraphobia is more common in high altitudes than in low, and gives a case where it was evoked even by the picture of a mountain when the patient was in bed. Sonnier has shown that these phobias may both exist in the same person. Alexander (*Zts. f. Phys. u. Psy. d. Sinnesorg.*, 1911, Abt. 2, v. 45, pp. 153-96) found that of 118 new-born infants, most of them less than 24 hours old, 92 responded to rotation much like adults by head movements after and especially during rotation and by nystagmus afterward, which he interpreted as a vestibular reflex. Children love to play with their static sense of equilibrium by somersaults, rolling down hill, swinging, whirling till they fall, etc., to see the world spin around. Pirouetting dancers and whirling dervishes who turn for hours to symbolize the revolutions of the heavens show how controllable vertigo for rotation is. Perhaps whirling insects, aquatic forms, dancing mice, birds, also enjoy these sensations. In children they may be recapitulatory or prophylactic because they develop compensatory processes that safeguard them against this polymorphic symptom later. Certain it is that after middle life vertigo becomes not only a very common but a much dreaded symptom. It may occur not only with troubles of the ear (as Kreidel, Brück, and K. Beck have shown) and accompanies many disturbances of the stomach and pneumo-gastric nerve (the heart and circulatory system, the bulb and cerebellum), but it is also common with epilepsy and *petit mal*, neurasthenia, traumatic neuroses, tabes, kidney troubles and adrenalism, nasal and laryngeal disorders and as Dor has shown is common in glaucoma and it may be of toxic, cortical or suggestive origin (*Wilson, N. Y. Med. J.*, Nov. 25, 1911, *et seq.*). Oppenheim (*Neurol. Centralbl.*, 1911, p. 290 *et seq.*) thinks that true chronic vertigo does not rest on any material change in any organ, but its only constant basis is an irritable

condition of the nervous system or a neuro—or psychopathic constitution. Here belong many anomalies, such as periods of remission and exacerbation, its persistence after lying down, the fact that walking is rarely impossible although the ground may seem to give or rock, that riding may suppress instead of enhance it, that it may persist for years with no compensation whatever. Friedlander thinks chronic giddiness may be psychogenetic and a result of suggestion, and that its chronicity may arise gradually. On account of its great complexity, its connection with so many parts, functions and diseases, differential diagnosis, although greatly desired and needed, has not yet progressed very far. Laboratory studies are mostly confined to ocular and vestibular giddiness. Introspection could probably go further and distinguish these, not only from each other, but from dizziness of gastric and perhaps circulatory origin. But there is always the question whether back of all these specificities there is not a very generalized form, from which all its many varieties have sprung. Even in normal, every-day life, questionnaire data indicate that in its slighter and more transient forms it is far more common than had been supposed, as if man were not yet very securely established in the upright position. Many in their ordinary avocations suffer from occasional onsets of lightheadedness and develop often through months and years rather elaborate defence and compensation systems and methods, such as fixating stationary objects, stooping or holding the head down, slowing down the gait of walking or giving it a slightly spastic character, making occasion to take hold of things or persons, clenching the hands, gritting the teeth, swallowing, deep breathing, making some excuse to bend, sit, or even lie down, using smelling salts, etc. Ewald shows that giddiness may cause slight errors of accommodation or convergence that modify our impressions of distance and cause us to make mistakes in grasping things. There may be anaesthesia of the soles of the feet, that causes the patient to wobble if he stands with eyes closed and causes actions that have been compared to what would probably result in a change of the center of gravity, or gazing into a mirror may reduce the static sense. In such cases the fear of betraying the symptom to others seems most common. Next comes anxiety lest one should fall down or against something and be injured. And third and least frequent is solicitude concerning the meaning of the symptom itself, for the subject's health, a sequence which, for the interests of hygiene, ought to be reversed. Not only do

such sufferers avoid high or dangerous places, but the confidence and straightforwardness expressed by their gait suffers impairment and they take on a more timorous attitude.

The tendency to approximate the body-axis to horizontality (to bend, stoop, sit, lie) in general mitigate, while converse upward movements enhance, this symptom. The agoraphobiac, too, cowers and tends to sink, the claustrophobiac to be up and away. Golla (Proc. Roy. Soc. Med., vol. 5, Neurol. Sect., p. 123) showed by use of a tippable rotating chair that with closed eyes his subjects were often quite unconscious that they were being rotated, but when the motion ceased they experienced a very marked after impression of movement in the opposite direction, although Stein has shown that with slow partial rotation angular distance can be rather accurately estimated, even in a box shutting out air currents. Mulder (British J. of Psychol., 1911, v. 4, p. 204) found a rate of rotation and reversal in which the initial sense of dizziness could be suppressed before it reached consciousness and a complete fusion result. Abel showed that after checking passive movements of the whole body in a straight horizontal direction there was with closed eyes a slight illusion of an opposite movement, while Mach, with a large Atwood machine to lift and lower the human body, showed at least a slight sense of movement in the opposite direction afterward with closed eyes, an experience much more marked in descending into and rising from mines. Cruchet and Moulinier, who interrogated aviators, concluded that the great changes of blood pressure they experience with hypertension, fear, vertigo, and afterward somnolence, do not depend so much on height as on the rapidity of transportation in space. The rate of speeding straight away, the pleasure of so doing which is neutralized by fear and its symptoms, varies much with health, age, disposition, and most of all, with experience, for it is very educable. We have neurotics who fear to walk fast or to ride much faster than they walk. Some seem to fear not so much an accident as the effect of the exhilaration of rapid transition upon themselves. Passive riding is essentially a human achievement, and in man it reverts to, revives and intensifies the infantile experiences of being carried, and the psychoanalysis of the future may refer the individual's love and dread of rapid transportation back to early experiences of being carried, wheeled or otherwise moved from place to place before or without the effort of walking. Every step, from the first animal or boat that primitive man made use of down to the most modern methods of transportation, has

brought great and new exhilaration, and also probably has excited new dreads in neurotics, whose fears today express an early stage before this series of discoveries began, where every translocation meant personal effort.

Vertigo is reduction of orientation in space. It occurs to some degree wherever there is incoördination between movement, whether reflex or voluntary, and the normal result of change of sensation it causes. Thus a weight which I find to be far heavier or lighter than I expected, and so gave too little or too much energy to the effort of lifting it, a slight cramp or tic that moves the limb, head or eye unconsciously, an unwonted afflux of blood to or efflux from the head, any very unusual distribution of blood or of nervous energy among the parts and organs involved in the somatic sensations that underlie the very ego itself, any disturbance of which gives a sense of unreality of self or of the world and thus lays the foundation for epistemological giddiness, any ailment that affects the normal dynamics of the body, especially in its relations to the outer world, any unwonted incoördination between the sum total or the relations between them of efferency or afferency, may give vertiginous impressions. (See second edition of Hitzig's "*Der Schwindel*," 1911, pp. 141). This may be not only very slight and momentary but unconscious. Any disturbance of the normal balance between the subjective and objective, the dynamic and receptive processes, a sudden access of either adequacy or inadequacy of response to the environment, the flashing sense that what we thought real is unreal or vice versa,—all these cause psychic and may bring physiological giddiness. This sensation thus has a very wide symbolic and metaphoric field of meaning. It is the genetic basis of man's impulsion to find his own place in the universe, to know himself and his world, to evolve a system of theory as well as of conduct and behavior that fits him to fill his place in nature.

VI. *Rabdo-ballisto-aichuro-acro-merintho-phobias.* Many think the *stick* was the first tool or instrument and that man became man when he could wield it. The question whether the higher apes can strike or use a club has its advocates and its opponents. However this may be, the stick principle was a discovery of inestimable pregnancy, probably unsurpassed by any other invention down to the present time. It was the first great achievement of the hand when its long evolution was accomplished. The power to strike with fists and hands made man formidable to his fellows and to lower creatures, but to swing a stick through a large area and therefore with

greater velocity, to transform the point of impact or concussion from the sensitive and softer hand to the hard, heavy end of a stick, even before it was edged or pointed, gave to man's hand a weapon which made wood and metal as well as enemies, brute or human, his servants. Moreover, as Lotze said of the cane, it extended the limits of his personality, for we feel ourselves at the farther end of everything we grasp, especially when it hits an object. Thus many primitive tools and weapons came to be mounted on handles, mostly of soft material, and so now lost, but which greatly increased their efficiency. Thus in the first stages of its use man became preëminently the striker, the hard hitter, and later the prying lever, the whip, the scourge evolved. From this first tool-weapon also came the mace, the caduceus, the scepter, symbol of kingly power among men and gods, and even the divining rod. No wonder, then, that the rod became the center of a complicated cult in rabbomancy so that magic power has been ascribed to it. Again, an infant under a year is prone to strike with almost anything in its hand that can be used for that purpose, but towards and after puberty the passion becomes so strong that Acher thinks that when it culminates boys are almost powerless to resist the impulse to strike animals, mates, weeds, flowers, posts, pictures, to pound objects. The child's conception of the chief function of the parent, the teacher, the policeman, is often to inflict blows with ferule, billy or birch, and Gulick lists many games such as baseball, tennis, hockey, cricket, etc., in which the chief charm consists in hitting or striking.

All this pleasure at the near end of the stick has its counterpart in the pain and fear at the other end. Even dogs fear the man with a cane, horses the man with the whip, and the civilian is more careful not to provoke the soldier or knight with a sword by his side or to exasperate the tramp with a cudgel or shillalah. For ages the stick in its many forms has been the agent of judicial punishment and private castigation. In view of the above facts we should expect to find morbid fears of the rod and this is not uncommon, especially among children. Even a single blow from parent or teacher has power to turn love into lifelong aversion and hate, and we have records of scores of children, more or less delicate, who have been thus made sleepless, nervous, or have run away. In a recent article on children's suicides, out of nearly 250 cases it was computed that nearly 20 per cent. were due to fear of anticipated or mortifications after inflicted punishments. The history of flogging and scourging in criminal

procedure, prisons, armies, navies, as well as in schools, is long and its literature is copious; so it is in the story of the wager of battle, of personal encounters, from the stick fights in many parts of the East to the refined codes of the modern swordsmen duelists. Thus the impulse to hit and the dread of the shock of being struck have had a long and varied history. There can be little doubt that rhabdophobia or morbid fear of the rod or even masticophobias strikes its roots in some way into man's ancestral experience, as does the complementary tuptomania or the passion for hitting. Its countervalent or opposite is seen in the passion of the flagellants and the self-scourging of penitents, which almost suggest rhabdophilia, under the spur of the instinct of justice to give each sin its due meed of pain. Even boy champions court blows in conflicts because the pain they inflict is far less than the pleasure that comes from the excitement of combat. Thus in the rod complex we have a good illustration of several of the fundamental principles of the dynamics of man's instinctive emotional nature:—(a) its primordial beginning, coeval with that of man itself; (b) its intense and varied pragmatic value; (c) its progressive evolution and differentiation; (d) the very strong feeling that the rod has a value that far transcends man's comprehension and which thus expresses itself in thaumaturgy, conjuring and the rodmanies; (e) its strong ontogenetic recapitulation in the modern boy; (f) the morbid forms of it in cases where the instinct to use and the fear of it are abnormally developed; (g) the countervalent overcoming of the fear in heroism, penance, self-castigation.

When after learning to hold a hard object, e. g., a stone, in the hand, and to strike with it, the stone slipped out of grasp and went on in the direction and with the velocity given it by the hand, *throwing* was suggested and soon learned. This power no brute acquires. It was the first palpable form of action at a distance and marked a new and pregnant epoch when man became the *thrower*, hurler, propeller. From this sprang later all the ways of projecting things and of ballistics. Angular rapidity remaining constant, the longer the arm or the arc through which the hand moved, the greater the velocity of the missile, and hence came the sling and the throwing stick, in all their varieties. The throwing passion in boys is often so strong, especially in snow time, that windows, vehicles, street lamps, passersby, domestic animals, trees, posts, and any conspicuous object arouse an invincible temptation to throw at them. Thus the street urchin is ever re-celebrating the acquisition of this new power. Out of this

soil also grew skill in many games, ball, quoits, billiards, ten-pins, archery, tennis, polo, battledore, etc. Boys grade their throwing power by distance and accuracy and some one has enumerated the scores of things they throw in the order of preference. Here, too, myth records the most incredible prodigies of strength, speed, skill. Things animate and inanimate are thrown across the sea, to the moon and the sun as if gravity and the law of resistance and decreasing momentum were superseded. So entrancing was the throwing idea that the wildest fancy has sometimes been let loose to supplement fact. An Indic hero threw a downy feather through an enemy's breast and his rival threw a leaf into a rock so deep that only a tiny scar could be seen where it entered, and a high and solitary mountain shows where a hero picked up an island and tossed or heaved it onto his foe. Thus it seems as if fancy grew delirious and ecstatic when man learned to throw. Dogs and other animals have learned to fear and fly when boys or men even stoop to pick up a missile, and balistophobia or morbid fears of missiles is not at all uncommon among timid children, while in adults it splits up into special fears of injury of person or even property by a multitude of swiftly moving objects, from lightning and bullets to snow-balls and stones, against the scathe of not a few of which criminal law in every land has provided.

The *point* has played a great rôle in the evolution of man, but its psychology has never yet been written. When primitive man first learned to bring his whole energy to bear in thrusting a sharpened object at and into his foe, he became almost invincible. The sharper the point and the greater the force that pushed or impelled it, the greater, of course, the penetrating power. The teeth, beaks, claws, horns, nails, of animals taught this principle, and it is no wonder that arrow-heads are among the oldest of the arms of man. The point must, of course, be strong and of hard material in order to bear the strain, and so every step of the progress from sharpened sticks and stones to ever harder metals, was epochful. Victory over beasts and human enemies was in proportion to the perfection of pointed weapons, for they must often pierce tough, shaggy hides or shields of foemen.

When man had not only learned to put a handle upon his point but to throw his sharp weapon, and still more to do so with all the momentum acquired by the invention of the bow, he became still more formidable in both hunting and warfare. Ancient myth abounds in accounts of darts, spears, swords, arrows and javelins of wondrous acuity and impelled at in-

credible distances with a penetrating power that nothing could resist. Apollo brought pestilence with his darts and Cupid love. Jove's thunderbolts were hurled from Olympus with strange power to pierce and destroy buildings, trees, rocks, animals, men. No armor could resist King Arthur's Excalibur or the Volsungs' good blade Gram or the spear of Ithuried, and the very rays of the sun were apperceived as darts, as were the shafts of death. Here, as always, with the danger grew the terror. The psychology of war describes but does not explain the strange panic that seizes even hardened warriors, that arises before serried lines of victorious troops advancing to a charge, and no one who has not felt the terror of a broadsword or dagger can realize the mad fear that it inspires. The dread of anything liable to penetrate the body has thus had a long period of incubation, while on the other hand the instinct to pierce it, which points suggest, often crops out even in normal children, with their mania for pricking not only others but themselves, as Acher (Amer. Jour. Psy., v. 21, p. 128) shows. Still more striking vestiges of these complementary psychoses appear in the imperative impulses of the stabbers and in aichuro- or belono-phobias. The one brings raptures sometimes suggestive of the frenzy of modern warfare, throwing up blood pressure and bringing general erethism, while the other involves a no less frenzied horror at the very sight of any sharp point or edge that could be used to pierce. Even a penetrating look, a stare, the power of which several contemporary psychologists have actually thought it worth while to investigate (See Coover, Amer. Jour. of Psy., Oct., 1913), a finger pointed menacingly or thrustingly at us, especially if approximated boringly toward infants, in whom it often excites the almost spasmotic manifestation of the tickle sense (the excitability of which shows in both tickler and tickled the psychoneural scars left in the phylum by its accumulated experience with thrusts),—all these belong to the same genetic category of piercing the dermal surface which bounds our physical ego, outside of which lies all that is objective and inside of which all that is subjective. Traces, then, of these old shudders, which should have long been left behind, still survive and occasionally erupt in natures in which they are uncompensated in unreasonable horrors of forks, thorns, toothpicks, nails, even pointed fingernails, ornaments and sometimes pictures of anything that might penetrate the body.

That suggestions of piercing and being pierced may come to have a predominantly sex meaning in some cases the symbol

analyses seem to have made certain. The sexual soul is a great synechdochiser, but the fact that very many children long before puberty have fears of points, and the fact that the chief pain done to man and his history was by non-sexual piercings, shows the limitation of this interpretation. With the invention of gunpowder this psychosis was reënforced and also given some new features. The effort involved in piercing an enemy's body is now practically eliminated for chemical takes the place of muscular energy, and both the range and power of the projectile and the difficulty of defense are enormously enhanced. So we now have a passion for shooting something and the often morbid dread of firearms, greatly intensified as it is by the noise of the detonation. The modern warrior and hunter stabs afar off with a bullet, the velocity of which vicariates for the sharpness of the piercing point, and hunted animals soon learn with considerable accuracy the range of every new weapon. But this new zest and fear have behind them the psychogenetic momentum of the paleolithic age when the discovery of the mighty power of the point contributed so much to develop man's intelligence and to place him at the head of the animal kingdom.

To this end the *edge*, twinborn with the point, also contributed much. Wood, stone, hard and harder metal with ever acuter finish, on to the razor and microtome from the crude wooden and claystone ax to obsidian, bronze, and to the steam chisel that cuts cold steel like wax, swords tempered and acclimated to cut armor as well as hairs and gossamer, and every kind of cutting tool, blades of magic power to cleave trees, rocks and mow down men, the kit of the modern surgeon that enables him to dissect the living body, and if we add to this all types of the saw, shave, adz, ax,—all these are simply prominent chapter headings in the long history of culture. Here, too, myth has run riot in its tales of blades so sharp that they could cut gossamer in the air. In one Arabic tale a warrior waved his scimitar before a guest many times at which the guest wondered and laughed, but on being told to shake himself fell into slices, the weapon being so swift and keen he did not know it had touched him. All the instincts connected with the episodes of this story have spontaneous outcrops today in the boy's love of the knife, of whittling, carving, in girls' interest in scissors, which Acher has brought out in such strong light. The edge mania too has its phobia and its countervalent *Umschlag*, for whatever gives power also brings danger and so besides aichuro- and belono- we have acro-phobia, which latter is rarer, as we should ex-

pect, because from the first cutting is less dangerous than piercing, but which is of interest because both loved and feared. Thus we have here another epoch-making discovery which still reverberates in the secret recesses of human nature in a baffling way.

The *string* principle has played a great and almost wholly benign rôle in the world's history and has an anthropological literature of its own. The first grass, withe, bark, used to tie things led on to knots, weaving, the bowcord, games and puzzles galore, and even to a language as in the case of the quipu. String exists in nature and is used by spiders, by weaver and sewing birds; crows fear it and are kept from fields of corn by strings around it, as if they had learned its possibilities as a snare. Man has put it to very diverse uses. Of this interest we have a rank and spontaneous outcrop in children. Acher says that they have no spontaneous interest so strong from five to eight as that in strings and cords, which he thinks is now neglected but should be systematically utilized in inducting the child in the many mechanical, industrial and even intellectual possibilities in it. Games with string are hoary with age, and they have been used in many religious rites and ceremonies, chants and songs. Bolton found 97 forms of cat's cradle and thinks that they go back before the pyramids and are almost universal among savages as well as civilized people. All textile arts and everything knit evolved from the first thread, and weaving, embroidery, wicker, crude or refined needle-work, basketry,—these have always been in some form one of woman's chief accomplishments. Sewing is now often prescribed as a sedative or placebo for tired nerves, which, like so many other cures, is due to reënforcement from older evolutionary strata. Ropes, wires, chains, cables and all species of the genus string and its many utilities make the question unusually interesting whether it too is an object of morbid terror. Merinthophobia, however, although rather rare, is directed largely to the uses of the string principle in binding and restricting liberty. Before jails and prisons, not only criminals but slaves were tied. Captives were tied up, mutilated, tortured, or for sacrifice perhaps burned or hung. Without the string principle the very word bondmen would have had little meaning in its literal, and perhaps less in its symbolic sense, and our language would have been otherwise much the poorer in its tropes and figures of speech. Perhaps even the modern idea of freedom would thus have been less developed but for this principle. Victims of this rare obsession, of which children quite often show traces

for a time, feel a sense of suffocation at the sight of a string or as if it were a serpent or might form a noose or tighten about their neck, chest or limbs. They hear, think or dream with horror perhaps of animals tied in their stalls and burned to death in a conflagration or of being drawn under water by some entangling mesh or cord. They reverize how small, strong, sinuous or tight a thread, twine or wire might cut into the flesh or enmesh some part, and with these thoughts there is almost always labored breathing. On the other hand as there is a mania for or inclination toward about every object for which there is a phobia, so here we find in some, especially adolescent girls, a passion for tying themselves up, often so ingeniously that it seems as if another must have done it, until they are truly helpless. In such cases it seems as though there were an instinct to be passive and to put themselves into the condition of being freedomless victims. This of course does not involve any feeling toward the twine that ties but is only based on the craving for a situation in which they are unable to save or defend themselves against imaginary quasi-inviting victimization.

These five, the stick, missile, point, edge, string, and their derivatives and uses constitute a closely related Pentateuch of psycho-genetic categories of somewhat peculiar character and interest. (1) First we have a very obvious and quintuple repetition in the modern child of the very early culture history of the race. So strong are these impulsions to re-live long ancestral stages that modern pedagogy should utilize far more than it has yet learned to do this momentum, so much of which now goes to waste, by training this rank interest earlier in children, first in the way of the broadest psycho-motor development and later in a more specific industrial way. (2) While most normal children show inclinations to use about all five of these objects painfully upon others, and a natural reluctance to have them used thus upon themselves, they strongly tend to fall into two groups, the inflictors and the sufferers, the one tending towards mania or philia, the other towards phobia, both of which in exceptional cases become pronouncedly morbid. (3) Childhood is by far the largest and richest field for studying all these phenomena, most children having for a time the passive, active, or both attitudes to a degree that would be distinctly pathological in adults but which in them is generally outgrown or successfully compensated later. Adult phobias, and especially manias, though more persistent and isolated, are far more rare. We can never understand psychoses or even neuroses without

understanding children, who seem to carry in their nature the keys of both, so that for a time they can understand these aberrations better than adults although as they mature to normality this portion of their lives becomes a sealed book.

(4) The sex interpretation of the above difference as sadistic or masochistic represents a far more special case of bifurcation of human nature although it is an exquisite illustration of a far more general law, and although it is true that in this wider field girls more often tend to the phobic and boys to the philic or aggressive diathesis. (5) Each may show *Umschlag* phenomena or conversion into the opposite. Those most fearful of them may feel and yield to the impulse to strike, pierce, cut, tie, and those with a philia for doing this to others may sometimes suddenly, but more often gradually, become so tender and sympathetic that they take fantastic precautions against injuring others in these ways. Thus the one comes to love what he hated and the other hates what he loved, for every impulse has its unconscious countervalent opposite which, if the conscious impulse goes too far or dominates too long, may itself come to the fore while the formerregnancy sinks below the threshold, where it may be able to express itself only in dreams or automatisms while it is biding its time for another revolution that will bring it into power. (6) If phobias are thus sur- and revivals of traces in us of the salient points of long ancestral experience, we cannot understand the one without the other and may sometimes reason both ways. We may infer from strong and in the individual inadequately motivated impulses something as to what experience the race must have passed through. Conversely, when the latter is known, we may confidently expect if not predict outcrops of similar phenomena in childhood and in neurotics. Perhaps ultimately we may thus foresee and anticipate ethnology on the one and paidiology and psychiatry on the other, and postulate for pragmatic reasons what science will later demonstrate as genetically true.

VII. *Ophidiophobia*. The most universal of all animal cults is that of serpents. There is hardly a land or primitive race upon which it has not left its traces. It pervades every mythology and enters more or less prominently into every known system of religion. It has left its marks, monuments, mounds and architecture. Of all animal cults many think it the very oldest. It enters into most ancient rites and is central in many of them, from the Eleusinian mysteries to the Moqui snake dance. The symbolism of which it is the center ascribes to serpents two opposite characters, one good, the

other bad. From ancient Chaldea as a center it irradiated widely in the antique world, and new evidences of its prevalence are constantly found. The serpent tribe has had many fanes and temples, and the Adams County (Ohio) serpent mound is about a thousand feet long. There is a great and growing literature upon ophidian folk-lore, superstition, worship, etymologies, and totems. Serpents guard treasures, are connected with various divinations, give knowledge of underground treasures and passages and of the future, teach agriculture and healing herbs, and have played a great rôle in medicine. Serpents, large or small, with or without wings and legs, are thought to have infested various lands. Some are both wise and cunning. They change their form, protect maidens, infest certain wells, dens, mountains, fens, jungles, caves, islands, perhaps live at the bottom of some sea or lake, and are often associated with fire, lightning, charms, death, and there are many tales of ophidian lovers and of maidens who have given birth to serpents. Again, there are mythic monsters galore with more or less serpentine traits, dragons, hydras, gargoyles, pythons, behemoth, sea-serpents. In some tales great serpentine creatures have created the world and they are often closely allied with death. Dresslar collected 33 typical contemporary superstitions concerning them, and they may infect dreams and appear in forms of mental alienation as well as delirium tremens. If we include all creatures with serpentine traits, like griffins, lizards and other creatures, we can understand the suggestion of Gomme that some of these popular fancies may be connected with remains of the great triassic saurians. The conquest of formidable creatures of this general type is often among the great achievements of culture heroes, from Hercules and Apollo to Beowulf and Saint George.

For genetic psychology it is a challenging problem to account for this proclivity to reptilian, lacertian or more specifically serpentine psychoses. Are present-day experiences with serpents together with traditions and their social inheritance sufficient to account for contemporary man's attitude toward creatures of this type, or must we assume some kind of psychophysic heredity, going back perhaps to the time when to our tree-dwelling forbears serpents were the most dangerous of all their enemies.

Before we can answer this question we must glance at a few obvious facts. First, what are the chief traits of ophidian life that are most impressive? They are first the uncanny form of movement, without legs, by sinuous windings and

writhings. Snakes seem to slip and glide along in a way that seems very mysterious, as if by some supernatural or magnetic power, and they pass over water in the same way. Moreover they slide along with their entire belly on the ground, under the grass or leaves beneath our feet, noiselessly, perhaps, half covered, and usually protectively colored, so that they escape notice until they are upon us. The superstition is widely prevalent that they can climb up our bodies as they do trees and enter them, especially those of females. Again, their eyes are bright, lidless, beady, and generally apparently motionless, and are thought to charm and fascinate not only their prey but man. Slowly as they often move, some have the power to spring, strike, grasp, and coil with great rapidity, and folk-lore abounds in tales of their clinging about legs or throats and choking, and we have many a record of neurotics who feel symptoms of strangulation at sight of them. Again, their bite is apparently very trivial but their venom may kill suddenly and in a way that seems magical. Thus the cobra slays its thousands annually. The reptile's coldness of blood, its long periods of torpor between meals, hibernation, the great age often ascribed to it, its unique power to shed its skin, which has made it often a symbol of resurrection and immortality, constitute an ensemble of qualities that is very unique. Thus if we knew all about the history of totemism, those writers may be correct who assume that in every land we should find traces of serpent totemism as widely diffused as is the snake race itself, so that it may be assumed to have had a certain preference of selection for this function.

My collection of children's morbid fears of snakes and things that creep and crawl like them (using only those cases where we have the parent's, teacher's or child's assurance that there had been no known or special experience with them) now numbers 94. Some cannot step off the path onto the grass or on leaves without very cautiously and perhaps constantly looking for snakes. Some search the bed every night or fear or fancy that they may twine over chairs or tables, imagine all kinds of hissings and rattlings, which they ascribe to unseen snakes, fear to drink in springs, lest they swallow their eggs, perhaps dream of them persistently, have a horror of toys that suggest them, will not touch or look at a book in which they are pictured, faint at the sudden suggestion of their presence, or even the sound of the word snake, and sometimes the horror of caterpillars or worms is connected with these phobias. A botanist even yet thinks imperatively of snakes

when he is out collecting plants. Others dread them most when they go in swimming, start at every stick or string that suggests them, have a sudden panic of them when climbing rocks, fancy they might meet one when up in a tree, imagine them in wells, ditches, sewers, water-pipes, outhouses, are seized with a sudden shudder that they are inside their clothes, perhaps down their backs or breasts:—types of fear which are much more common with girls, whose dread of them is more spasmodic, prompting flight, while boys usually conquer their fears by a passion to kill which seems unusually strong in man at every age, who seems ever bent on fulfilling his mission of crushing the serpent's head. Children often invest them with marvelous powers, e. g., they can stand erect on their tail or with but very slight support, can roll like a hoop with tail in mouth, can run up and perhaps penetrate the body, leap great distances, can strike or sting with the tail, emit horrid odors, paralyze or hypnotize with eyes or movements of the head and tail, think they lure birds, suck milk, come to life after being killed, that the tail dies only at sunset, and in general show facile credulity to all sorts of *Aberglaube* to which they are exposed and to which their feelings cling, perhaps imperatively, long after the age of reason has dawned and they know better. Like so many other forms of fear these are very common and often in morbid intensity in normal children for a season but are usually completely outgrown, leaving no trace in adult life, unless strain or other experiences initiate reversionary states which often bring a strange recrudescence of them and show that their vestiges persist far below consciousness. Perhaps despite the denials many or possibly all of my 94 cases really had some experience with snake-like creatures, although the majority of them seem to have been bred in the city where serpents are rarely seen, and a few were under two years old and therefore could hardly have heard unfavorable mention of them. It seems to me we should infer from all this that the childish psyche is peculiarly susceptible to suggestions of this type of creature made up of its unique traits, and perhaps analysis would show that all focussed on one or another of these qualities.

If there be an ophidian *Anlage* or a tendency to a characteristic psychic attitude toward the snake family that is in any sense phyletic, this need not be a complete ophidian pattern linked with a group of motor preformations or a definite type of feeling ready to be set off by the first experience. But all we have to assume is a greater tendency to develop

any group or even a single one of all the elements of the snake complex. Would the psychophysic organism of the individual develop in the same way and with the same facility in this direction as it would if there had been no ancestral experience? Heredity may give only a certain preferential facility of association between two or more of the traits that make up the serpent character. A snake-like form and the sinuous form of movement, e. g., or beady eyes, coldness—any of these may tend to fuse with each other more readily because they once did so in the phylum. Again affectivity may be more easily aroused by such impressions from the receptors and its resonance a little clearer, or the motor centers of certain cries and spasmodic movements a little more impressionable from these sources. Again when any single quality is focussed on, as brilliant eyes or sinuous movement, it alone cannot be assumed to be an adequate excitant because the impressions of certain other traits that make up the ensemble must be assumed to co-work, at least unconsciously.

Students of the intensity of Mendelian heredity of physical traits make this influence diminish very rapidly as we go backward, parents, e. g., giving $1/3$, grandparents $2/27$ of all. Thus if we were to go back 700 years with 20 generations, when the theoretical number of ancestors was 1,048,576, the contributions of all the ancestors of the generation farthest back would be but very little, so that if we were to go back some thousands of generations, as Haeckel estimates their number, to our tree-dwelling forbears, this influence would be infinitesimal. Hence on this theory the probability of transmission of a trait to modern man from his Simian predecessors would be almost nil. But neither the theories of Weismann nor the figures of Pearson fit this case, and that for the following reasons: First, children do in fact often show the persistence of traits of body in the scores of rudimentary organs according to Wiedersheim. Again, the arboreal stage lasted very long and this is a potent factor in persistence. But third, and chiefly, the central nervous system differs from all others in that it is par excellence the organ of registration or of physiological memory. It is there that the traces of ancestral experience are stored so that almost nothing that was ever essential in the development of the phylum is ever entirely lost. Hence suggestive as are many physical traits of our racial history, the intangible psychophysic traits must be assumed to be both far more numerous and more indelible. While these faint tendencies often crop out in a behavioristic way, by far the most of them need

some stimulus of individual experience to awaken them, and still more exist only in a slight facilitization of impulses or permeability of nervous centers, lability of molecules or neural tensions, or as preferential reënforcements in one rather than in another direction or manner:—in this case from the organization and activation of the innate psychic momenta or other activities that constitute the highly complex reactions to fear. To make a violent not to say absurd supposition that everything spherical a generation or two ago became self-moving and just as dangerous as serpentine creatures have been during that time, can we assume that man's instinctive reactions to this would be as pronounced or as fearsome as those to serpents even if tradition had grown up about the former as rank and as fearsome as those about serpents? Is there no preformation or predetermination or are such propclivities to *Stellungsnahme* themselves genetic and innate, unorganized though they are at first? All admit that we inherit the capacity to shudder and to fear, and none claim that we are born with ever so generic a snake image any more than we are born with *Anlagen* to other general species of animal life, but this is not all the story. There must be something between, a missing link, if only in the form of the reduced resistance between the ensemble of the several snake qualities as they impress the sense centers and the inborn type of fear response. That is, these two are functionally nearer together than the imagery of dangerous self-moving spheres could be brought in a few generations, and this constitutes in some way or degree a determining tendency which we might call a theomorphic fear matrix which can be impregnated only with this specific type of imagery. There must be something here which we do not yet know and of which some such term may be a provisional figurative designation of a quaesitum, and here in the present stage of genetic psychology we must leave it, awaiting the light of further knowledge.

Finally, as in amatory fetichism, affection tends to focus on one trait of the loved object—hair, smile, complexion, etc.—so here (as is the case in other phobias) one serpentine trait is often focussed on—eyes, mode of progression, coiling, biting—to the relative exclusion of other traits. Both these fetichistic phenomena are far more common with the young, and the fears which seem to show the most of them are those that though perhaps morbidly intense are, in the process of growing up, entirely eliminated. Why this stage of fragmentation of this fear, this hyper-accentuation of one trait among many? Does not this apparent lack of cohesion of essential

traits indicate a disintegrative tendency among the factors that enter into the ophidiophobiac matrix postulated above? We answer no. We see in this phenomenon only a case of the wide ranged law of over-determination by which one factor in the complex is pushed into consciousness and made more prominent there by the other parts of it which remain below the threshold. Coiling, e. g., would not be so unduly prominent in the consciousness of the child who has this fear as it often is, did it not draw on the psychic energy of the other submerged components. Indeed the trait that is focal in consciousness may and perhaps must be the least effective in arousing the motor response and the feeling. The psyche often hangs out a signal to show what has happened, and this signal is often at first an epiphénoménon which later comes to be itself cardinal. First came organic response and then the awareness focussed on the trait that was least effective, which thereby became thereafter not only the most patent but the most efficient stimulator. This suggests too that the image in its totality is not the chief excitant of the serpentine fear attitude, and that by a kind of afferent metonymy a part of it may, and very commonly does, do duty for the whole, but also that the energy of excitation is thereby increased.

VIII. Turning now to samples of a very different group of phobias, the literature on *ailurophobia* or morbid dread of cats usually describes it in adults. Rare in its extreme, it is so common in its mild form that a large proportion of mankind take sides and either like or dislike cats at the same time or by turns. The presence of cats in every known land and age shows that the ailurophiles, among whom women predominate, vastly outnumber the ailurophobes. Its relation to man is based chiefly on its attitude to small rodents, especially rats and mice, which have always been commensals and parasites of man. Both love and fear of cats are far more common and so best studied among children and young women, whose feeling toward them is based on other than their utilitarian qualities. In my collection of ailurophobias of varying intensity among the young, many causes, both vague and specific, appear, from "because they are loathsome and disgusting," to "because one once scratched and bit me badly." Most children have suffered some more, some less, from their teeth and claws, but their even chronic and strong aversion is usually overcome and it is only a very myopic psychology which accounts for all aversions in this way. We have a number of specific causes, more or less distinct. (1) Some affirm that their repulsion toward them is "because they walk

so stealthily and noiselessly that you do not know that they are about until there they are." "They step around so slyly that you have to watch them to know where they are." "They may be out of sight, hiding under or behind anything." Hammerton observed a cat leap to a sideboard, explore it and thence to a completely set dinner table, worming its way between delicate wine-glasses, touching nothing and making not the least noise, when a dog would have upset things. This, then, is the first indictment against them and is the reason why the rats in their fabled parliament resolved to bell them. Our criticism of their stealthiness is a rudimentary form of the same feeling we should have more intensely if housecats were the size of their big congeners, lions, tigers, leopards, panthers, ocelots, etc., which once commonly and still in some lands made man their quarry, somewhat as cats do rats. When the Kaiser visits his relatives at Buckingham Palace it is said every room in his suite must be thoroughly searched by a trusted official as to whether cats lurk unknown in some nook or corner, for this the war-lord cannot abide. The cat does not patter, bark or bay like a dog to announce its coming but steals unawares on its unsuspecting victim until presto! the "sense of presence" is sprung upon him, but too late. This factor seems predominant in some ailurophobes.

(2) Another closely related, uncanny, gruesome, deeply graven element in our cat complex is our appreciation of their power to make such great and sudden springs or leaps. In our returns children fear them "because they can jump so far"; "they pop up on the outside of any window and scare you"; "they hop in your lap or on the table or anywhere without any warning"; "they are so quick you do not know what they will do next"; "when you play with them they may get mad or scared and go for you"; "our tom-cat is quicker than lightning, and I saw him jump two rods through the air so quick you could not see him to catch a robin." Thus their saltatory power is often magnified to mythic dimensions. The cat to children is a salient illustration of the shock-inflicting power of being jumped out at and this is another ingredient. Practically every vertebrate that in fact or fancy may suddenly spring upon and overpower us is one of the Felidae.

(3) Its nocturnal habits intensify the dread of both its creeping and leaping traits, and this is intensified by the omatophobiac tendencies. "Its eyes are so shiny and glistening at night and in a dark cellar that you can see nothing but two glaring balls of fire," etc. Living things upon which

the wonderful optic organ of the cat tribe is unwaveringly focussed (for it is thus they have acquired a trait of attention and persistence in which Romanes thinks they excel all beasts) have usually been in grave danger. Folk-lore says that they thus charm, fascinate, hypnotize their prey. Only a fraction of the creatures who have experienced the baleful influence of its evil eye have survived to tell the tale. Hunters caught and mangled by the great cats have described the horror of their eyes as fiery, bloodshot, piercing, and some have thought they owed their lives to steadfastly staring the beast out of countenance in a kind of preliminary battle of eye to eye just before the beast sprang. Naturalists always marvel at the power of the cat's eye to see at night as well as by day, and even imitations of it are often used as charms.

(4) Next comes the homuxophobiac element or the fear of claws, together with odontophobia or fear of teeth, which is very akin to it. "A cat can run up you and stick its claws in your eye and tear it out if it wants to." "A lynx could grab you by the throat and rip your clothes off and tear your insides out with its hind paws." Several infants, which had loved cats, on seeing them yawn, show their teeth and stretch out their claws, were shocked into more or less persistent dread of them. "A cat can chew up bone and bite right through your finger and never let go." "A cat can get on your bed when you are asleep and bite in and suck all your blood and breath out." Thus the cat makes a strong appeal to the acuophobiac potentialities of juvenile humanity. Writers like J. Wesley Mills and Cornish mention the great delicacy and deftness with which the cat uses its forepaws, and the very early stage in its development in which this power is acquired, and call it almost manual. Save its ancestor the hyena, the cat jaw is relatively the most powerful known.

(5) The cat's vocal powers are no less exceptional and uniquely varied. It can growl threateningly, purr (a "whispered growl" as a girl termed it), it can miau plaintively and wheedlingly in asking favors, and this if it has to be too long repeated may rise to an angry and despairing yowl like the angry cry of the baby. It has a remarkable register of shrieks in its combat with its fellows although often silent when battling with dogs. It has also a crooning note inviting its young to its dugs. Very unique is its hiss and spitting, which is highly developed in some of its wild congeners and which some think it copied in order to add an ophidian terror to those which its own powers could create. These seven types of phonic expression for as many different sentiments

are all in the highest degree expressive, not only to its own species but to man. There is much reason to think that all infants have to learn not to fear even the most specific of these utterances, while some soon come to be very effective danger signals. Altogether this vocabulary shows the cat's nature to be emotionally rich and diversified although it is almost proverbially changeable and unreliable. Animal vocalization expresses feeling, not intellect, and the child lives so largely in the world of the former that its *rapport* with the feline soul is made much closer by this quality, so that it anthropomorphizes the cat and learns far more of the animal soul from it than from the more humanized and less composite psyche of the dog, for the cat has rightly been called the most emotional as well as the most vocally accomplished of mammals.

Besides these more readily rubricized elements of children's ailurophobias, our records show many other special features. One lady feared "nothing so much as the silent to and fro movement at the end of a cat's tail," which she fancied might even bite her and always watched for and dreaded it. This, too Cornish would say had a viperous suggestion. Another had a "horror lest a cat's hair get into her food" for if she swallowed it she would die. Another was doraphobiac but for the fur of the cat only, "because it prickled and emitted lightning in the dark," another because it was "dirty and was full of everything filthy." Two children feared they would be turned into cats, one long fancied it was a cat, went on all fours, miauied, ate, drank, and acted generally like one. Many cat dreams were reported of big, bristling, spitting, crouching, round-eyed cat-like monsters, and one of a brindled cat prowling near as if it still wore the protective stripes of the tiger in its jungle as tabbies do. Dreams of spotted leopard-like or older ailuroid forms do not occur in my collection. Whether the dreams of animals show any tendency to correlate in the forms of their object with those with which the human phylum associated we do not at present know, despite the reversionary tendency often shown in dreams. The power of cats to swim well despite their inborn hydrophobia and to do so without learning, their ability to climb trees, their love of heat which makes them cuddle up to man and sometimes to learn to sleep on the backs of horses and on the ribs of dogs, which man often interprets as a sign of affection when the cat is only seeking a warm place (Ellis says that man to the cat is a tree, his legs are stumps for scratching against, his body a trunk to climb, his arms

branches that sometimes drop savory food), their moderate educability and power to learn to do mechanical feats, which Thorndike and Perry have studied, their strange homing instinct, which still rests more upon tradition than controlled observation, their vitality suggested by the phrase that they have nine lives, their care of their young and power to transport them from place to place, the marvelous rapidity with which their young develop:—all these together make the cat an ensemble of unique qualities uniquely combined, so that the individuality of the species stands out in a very marked way, and so that we see that the child reared without knowledge of cats lacks an important foundation for understanding human nature, and so that it is hard to see why in no language we have a single paidiologically devised cat-book. While the gregarious dog adapts itself to man, even to his moods and whims, the cat has been but very little changed by him and remains always itself and it is we who have to adapt to it. It is still a half wild animal, living with us. It still makes its toilet alone, unaided by mates, as all gregarious animals are, and it does so still however clean it may be washed, as it did in its original parasite-infested forest home. Besides hissing, Robinson has shown at length the very viperine coloration that in the marking of Manx and striped varieties of cats when they are curled up asleep makes them a close imitation of serpents, with a special mark on the thigh to represent the serpent's head. With its ears drawn back and its mouth upon its own head he also shows how strikingly snake-like it is.¹

A Berlin teacher of physics in a *Realschule* suddenly found that one bright fourteen-year old boy shuddered, was pale and nauseated and seemed unable to force himself to touch a new cat-skin, used to generate frictional electricity. The boy at first could only say that he feared there were vermin in the pelt but this was evidently a pretext. He was reasoned with and coaxed, and finally was able to force himself to gently touch the cat-skin with the tip of his fingers, and at length seemed to pretty well overcome his phobia.²

Weir Mitchell sent out a questionnaire on ailurophobia, to which he obtained 169 replies, one-third worthless. Some of the others he dismissed as worthless cases were of cat asthma, of which the symptoms were not felt for perhaps twenty minutes after being with a cat.

¹ Yerkes, R. M., and Bloomfield, D.: Do kittens instinctively kill mice? *Psych. Bull.*, v. 7. 1910, pp. 253-263. Perez, B.: *Mes deux chats: fragments de psychologie comparée*. 2d ed. Paris, Alcan, 1901. Cesaresco, E. M.: *The place of animals in human thoughts*. New York. Scribners, 1909. 376 pp. *Passim*. Perrens, M. F. F.: *Mémoires des mes chattes*. *Rev. Scient.* v. 12, 417-424; 461-467; 491-494. 1899.

² Ein Fall von Mysophobie, von Dr. Krassmöller. *Zts. f. Kinderforschung*. Nov., 1913. Vol. 19, no. 2, p. 104.

In such cases there may be actual liking for cats, and it seems rarely to be what the victim of the trouble calls fear, although we should distinctly rank all such cases as organic fear based on ancient experiences, even though it is the odor that may have an obstructive and crampy effect on the nasal passages. In 31 cases Mitchell was convinced that the cat's presence could be felt even when it could neither be seen nor heard, and found the signs of fear were sometimes acute. In some instances the victims claimed they could smell the cat. In others this was the case in childhood but the acuteness of smell had diminished with age. Others were confident they did not smell and could not tell how they knew of its presence. Mitchell opines that the olfactory disturbance, dim though it was, was sufficient to arouse respiratory trouble without reaching the cortex or coming to consciousness as an odor. Why cats should cause this fear he makes no attempt to explain but cites the case of a well-known tiger hunter who would tremble and flee before a kitten. Hughes (Alienist and Neurologist, Feb., 1907, p. 64) thinks cat phobias should be limited to those who have never had any painful experience with cats but would not include fears of wild cats. He thinks there is both a superstitious and hereditary dread but he believes it is always a symptom of deteriorative change, for it is often more acute when health is impaired or after great brain stress and may vanish upon recovery.

Defending himself from the charge of being a "ghost-smeller," the late Elliott Coues (Science, Aug. 6, 1886) intimated that the entomologist Scudder's phobia for cats, which made him aware of their presence when he neither heard, saw, touched or smelled them, was telepathy and that the asthmatic symptoms they caused in him, which resembled purring, might be explained by some biogenic odic, akasac, nervauric emanation by impinging upon the delicate Scudderian sensorium, which focussed his mind and gave rise to a psychic storm of feline origin, a transference belonging to the same genus as that which in other sensitives was established by the sense of presence of a ghost. Professor Scudder in a letter to me explained that his feeling for cats was not fear but that the odor of them brought on asthmatic attacks, that he was not affected by a cat on the other side of a closed window but the effluvia of other animals or even woolen blankets that had been in contact with them caused his symptoms, that he could ride on but not behind a horse for the same reason, that cat odors even if almost unconscious barred him from many houses. Professor Burt Wilder sent me many cases of morbid fears of cats by eminent contemporaries and had collected many notes and intended to write a book upon the subject, he himself being extravagantly fond of cats. A New York physician was so unnerved by the sight of a cat in his visits, especially if it was beside a patient, that it interfered with his practice. He then forced himself to stay in a room with a cat, the presence of which he could detect when it was unseen, and at last was able to touch and thus abated his aversion. A Madison Avenue girl had hysterics if she entered a room where there was a cat even if it was unseen. Her friends hid pussy on one occasion in a room where she called, and when she entered and declared it was present, vowed there was no cat about. She insisted, and when its presence was finally admitted, fell with a shriek into a dead faint. Sometimes it seems to be the smell and sometimes the horror is the stealthy, silent way in which cats move. I have a detailed story of a large Maltese cat that visited a room in a New York

tenement where it gave birth to kittens. Meeting a dog in a hall, it attacked and vanquished it, became furious and sprung upon the five-year-old child of its hostess, biting, scratching and inflicting forty bleeding wounds, some of them serious, before the mother, with the aid of neighbors, was able to beat it off. The child was taken to a hospital and the mad cat fled over roofs, mutilating another cat on the way, and escaped, but the mother's terror of its return caused her to vacate her apartments. We do not know how deep and permanent the fear of cats became in mother and child.

Turning now to the phyletic history of the cat, more than fifty species of extinct Felidae, some of them fourteen feet in length, have been unearthed, and fossil cats are found in all the great geographical regions of the earth. They are of comparatively recent and probably not pre-Miocene origin. Some think they originated in North America, where their early remains are most abundant. Cope calls them the most formidable and rapacious of all mammals, and Mivart says they are the best equipped for the struggle of life of all the carnivora. Their jaw used to be long but has shortened and strengthened, and is the most perfect of its size, both for incising and tearing, of all the beasts. The feet are padded for silent, stealthy approach upon their prey, and they have the mechanically most effective of all claws in both curvature and sharpness. Their eye is unique in nature and best fitted of all eyes for both day and night. Their digestive tract is very simple and adapted for the most rapid assimilation and elimination of waste, to keep the body light and agile. Their muscles and their leverage upon the bones are relatively enormous and capable of rapid action of spasmodic intensity as their long, quick leaps show, and the coloring of the wilder species is one of the most protective in the mammal world. Traces of them are found from the very earliest antiquity in the remains of every ancient nation. In Egypt they were worshipped and elaborately mummified. They were domesticated before history began. They played an important rôle in ancient medicine, both in its brews and its superstitions. Chamberlain thinks cats were not domesticated in the ordinary sense and that their use to man has been comparatively slight. Tradition reports that they were often very highly trained to do things that now seem incredible in the way of tricks. They probably came to man as a camp follower and scavenger till women and children took up with them, probably first by nurturing their young. They love and adhere, not to persons, like the dog, but to places. They have changed their nature perhaps less than all the scores of species that de Candolle lists as animals that man has reclaimed from the feral state,

that is their psychophysic constitution has been less modified by association with man and they always and everywhere readily revert to the wild state. Their ancestry and nature are solitary, not gregarious like those of the dog. This is reflected in their very deliberate eating habits, formed by feeding alone, and is in sharp contrast with the greedy gobbling of food by dogs, who in the ancient pack had to get their share quickly or starve. When they follow their host from their home it is only for a short distance and with the remnant of the stalking instinct as they follow game or because they hope to be fed, not as the dog follows his master because he has adopted him into his pack. The cat is still the guest of his human host, not because it must be but because life with man is easier and more comfortable. In the history of witchcraft cats have played a great rôle and black cats with glary eyes and bristling back and tail were twin horrors with witches. Cats have been bred in many fancy varieties though they differ far less than breeds of dogs, and now we have not only anti-cruelty laws but cat clubs, homes, refuges and hospitals. Browne gives us a long list of eminent men who were ailurophobiacs and philiacs. Among those with morbid aversions to them were Boswell, Napoleon, Lords Roberts and Raton, the present German Kaiser Wilhelm, and many others, living and dead; while among the cat lovers and petters were Walter Scott, Wordsworth, Hugo, Matthew Arnold, etc. Cats too have had their own artists and even caricaturists, which a recent author has enumerated.

Children still repeat the ancient behavior of man to cats. (See Hall and Browne: *The Cat and the Child*. Ped. Sem., 1904, v. II, p. 329.) As the Egyptians embalmed so children celebrate elaborate funerals of cats with coffins, shroud, burial services, tombstones and even cemeteries such as that which existed of old at Babustas. Children dress them as dolls, babies, put them to bed, draw them in toy wagons, christen, baptize, name them, become physicians to their various and frequent slight or even disgusting ailments and their anthropomorphism causes them to ascribe to them about every human act and sentiment. On the other hand they neglect and often torture them with exquisite cruelty, although they do often develop some sense of responsibility in caring for them, showing sometimes moving affection and sometimes intense if not innate hate and fear of them. Maspero thinks ancient cat worship was not so much adoration of an official cat-god as an expression of the natural admiration of the marvelous psychophysic organization of the cat itself. If it has been an object of religious awe, it has also been bedevilled, for no brew in a witch's caldron was ever without some ingredient from the cat in the recipe for its hell-broth. Its purring is singing, as many children interpret it, its nocturnal waulings are not only sleep destroyers but portents of ill omen. Punch says the cat is the most musical of all creatures because it is full of fiddle strings. Folk lore

makes its eyes emit baleful rays in the dark, and a German physiognomist has tried to show the close similarity between the features of the cat and certain human faces. The cat is connected with various demonic personages. If its fur is soft and it loves to tempt us to stroke it and it rubs fondly against our legs, it is because its pelt is infected with both insects and germs, so that it tends to use man's lower extremities as a strigil or back-scratcher. If the play of its young is full of charm, its temper as it matures is uncertain, and few children have not at some time felt its teeth and claws. If it allies itself with man in its warfare on rodents, it fights against him in preying upon chickens and birds. Those who train lions, tigers, leopards and other Felidae assert that in their ability to do things and in their intelligence and disposition they are very like the common house-cat. Their nocturnal courtships and desperate and noisy battles destroy sleep and attract missiles from otherwise even-tempered men. Some are of cleanly and some of innately filthy habits. Their pelt under many conditions shows almost startling electrical phenomena. To call a woman a cat is no less uncomplimentary than to call a man a dog, hound, cur or whelp. The cat is treacherous and also double-natured. The life of pussy playing on the rug or under the stove by day and its carousals by night show its personality to be almost incredibly dual. Statistics show that the cat is predominantly the girl's pet, although the latter after adolescence may prefer the somewhat cat-natured "poodle-lap-dog or puppy," while the dog is the pronounced favorite of the boy. The woman hater, Schopenhauer, said the cat represented the inmost nature of the female sex in both its good and bad qualities. Let us hope not for many reasons, one because so large a proportion of boys are hostile and cruel to cats that it is hard to believe that they are thus developing bad qualities that the other sex will later arouse and suffer from. We will not even repeat Robinet's ungallant inference from his generalization that all misogynists are also cat haters, that the normal woman, if she loves dogs, will love a well-developed and very canine species rather than the poodle variety.

Thus the offspring of the terrible patrofelis or parent of all the cat tribe have been ever since man's advent into the world as man his most formidable brute foe. He has gradually decimated and is likely to exterminate most of the larger and most dangerous species of the family, while taking some of its most diminutive varieties more or less under his protection. The Felidae mnemes and engrams in our psychophysic organization, whatever they are, cannot quite forget the old and long enmity and feud that existed for unnumbered millennia between the Felidae and the Hominidae, and so it comes that occasionally in neurotic and psychotic natures in which ancient traits are conserved, reverted to or hypertrophied, the tiny half-captive specimens that have insinuated themselves into our lives often suffice to reawaken something like the kind and degree of horror which the early founders of the dynasty of man felt for pussy's bigger and more terrible but now retiring relatives. The old fear mechanism in phobiacs

has not dwindled proportionately with the size of the members of the feline tribe. The odor, the slithey mode of movement, the various vocalizations, an optical impression of its form or color or the more emphatic stimulus of a scratch or bite, may suffice to activate the ancient fear or indeed only some single symptom or component of it, such as a nervous shudder, the mental imagery of an attack, a faint aversion or some respiratory modification like cat asthma. Thus we cannot hold that all forms of cat dread and aversion must be due to painful personal experiences with individuals of the house species. Social heredity and tradition of pre-historic experiences with the large varieties which may reach back much farther than we think, and hunters' and travelers' tales, and the glimpses of carnivora that children have in menageries certainly have little to do with the juvenile or even adult outcrops of the cat phobias, so that the alternative here seems to be pretty clear between personal experience and the postulation of some form of ancestral traces. We need, of course, to assume not only some generalized temible diathesis but something as specific as the genus *Felidae*. Those that sensed the big cats most keenly and farthest off, by whatever sense, and reacted to this impression most promptly, strongly and specifically, in a way designed for escape or fighting this particular type of animal, would have the greatest chance of survival, while those dull to signs of these dangers or without discrimination of the kind of instinct with which they had to deal, would be eliminated. Hence it came that these traits favorable to survival were impressed and inbred far too strongly to be effaced in a few hundred years in us all, and it is these residua which chance has preserved in a few exceptional individuals that are touched off into phobias by the slight stimuli that emanate from our dwindled reminders of the age when the cat was in its highest glory in the days of the awful sabre-toothed tiger. The cat family has thus on this hypothesis developed in man a reaction pattern with some quite specific features. Moreover their tread, smell, form, eyes, etc., remain the same. A genus is a combination of highly generalized traits unencumbered by specific and individual ones, and so the psychophysic cat-complex in us in some sense anticipated classification, each being now a voucher or reënforcement of the other. This complex bifurcates naturally enough into two components, one made up of good and the other of bad qualities, and with this also differentiated love and fear of cats, each of which, like all other such affectivities, may now vicariate for, intensify, or pass over into the other.

In fine, the genetic problem which we face here may be thus resumed. We have a large and compact group of animals much older than man, ranging from the lion and tiger down to the civet cat and mongoose, with form, habit, ability, psychic traits, strikingly similar in all and so unique that they are very distinct from every other genus. Some of these traits or cat categories are their way of stealthily creeping, their sudden spring, their nocturnal life, their remarkable eyes, claws, teeth, their lithe, agile form, their varied vocal gifts, in which they are exceeded only by certain apes, their solitary habits, bristling electric fur, etc. The larger varieties are now rapidly diminishing in numbers and in geographical distribution so that most of us never saw them unless in zoölogical gardens or menageries, although for the by far largest part of human history, down indeed to yesterday on the cosmic clock, they have been distinctly the most formidable of all man's animal foes. The smallest and thus least dangerous genus of the species has lived with man from prehistoric days. Its nature is essentially unchanged by domestication so that it still leads for the most part, the wild life of its feral relatives, and exhibits in miniature every essential one of their traits, to the understanding of which it is in some sense a key. Our children love it and its offspring as pets, and adults for its rat and mice-killing instincts. Both often develop much affection for it, which it never returns. Many if not most children, at some stage of their lives, seem to have some instinctive fear which may focus on any one or more of the above components in its constellation of qualities. Adults sometimes suffer from morbid and excessive cat-fears, far more rarely, though perhaps more acutely, than children. Can these unreasonable fears, so out of proportion to the danger in those who experience them, be explained from actual personal experience with house-cats? Would they be the same in frequency and intensity if all the cat tribe, large and small together, with all the stories and traditions concerning them, had been brought to earth from another planet, say a generation or a century ago? Or again, would the phobias have been the same if the house-cat had always been with man just as it has, but had never had any big relatives, or had they existed only in stories of adventures with them, which we accept on testimony, as most of us do hunters' tales; or again, if the big cats had always existed but always been kept safely in confinement? This, I take it, is the problem of the genetecist here. The most conservative answer we can now make to this question is, I think, that we should suspend judgment await-

ing especially more careful analysis of more cases of cat phobias in both young and old, for not a single case has yet been satisfactorily analyzed. If, as the facts so far indicate, these intense fears, especially of children, are often entirely without painful personal experience with house-cats, and if they are prone to focus upon one or more of the above peculiar and salient items in the ensemble of feline qualities, then the least we can assume is that painful experiences of man's phylum with house-cats had left some psychoneural preformation, predisposition, or tendency to *Bahnung* or *Anlage* that could be inherited, and that only a slight stimulus would suffice to bring out in a supervalent degree. Anxiety, which may be defined as *timor quaerens objectum*, finds and seizes upon these latent receptor motor patterns and activates them. If now the old terror of big cats had accentuated these transmitted affective patterns, the causal factor of heredity would be more, and that of individually generated neurotic instability less, so that the ailurophobe would contend with inherited more than with acquired dread, for he would be to some extent reviving the old fear of big cats which he wrongly interprets, from lack of psychoanalysis of himself, as fear of house-cats. These latter are the manifest as opposed to the latent objects of his fears. They are obvious to his consciousness while the absent or extinct monstrous forms are still remembered in Hering's sense below, though not above, the threshold. In what form our cat complex or its specific elements, stealthiness, stary eyes, springing, darkness-haunting, etc., are passed on from generation to generation, we know no more than we do why or how these qualities themselves are transmitted in the cat family, although here I frankly avow my own attitude as not unlike that described by the scholastic phrase, *fides quaerens demonstrationem*. Perhaps the psychoanalysis of my persistent *fides*, if I could make it complete, would itself help toward the demonstration. What constitutes the caticity of the cat? Freienfels, one of the most insightful of geneticists (Zeitsch. f. Psychol., v. 68, 1914), calls it a typical *Stellungsnahme*, an activity disposition and attitude best called a feeling.

The best proof that images of specific objects of fear are not inherited is that fear reactions may be set off by objects that are new not only to the individual but to the race. But it is a shallow psychology, prevalent though it be, that infers that where some stimulus or example of the parent is necessary to arouse fear it is therefore of empirical origin. Even if the cluck of the mother hen is necessary to arouse fear of

a hawk in her chick, the reaction apparatus is preformed in the latter and acts effectually upon its first arousal and ever thereafter. So even if a child has to feel pussy's teeth and claws and see its eyes in the dark or to be surprised at its stealth, leap, etc., in order that his fear reactions be aroused, the latter is by no means thus proved to be created by individual experience. Not only is the mechanism preexistent and acts (whether with absolute spontaneity or needing only a faint stimulus to initiate it) but the arousal of one factor, e. g., claws, probably facilitates the arousal of one or more and perhaps all the others, teeth, stealth, leaping, etc., so that the child soon comes to react to the one differently because of the others. Thus, e. g., the reaction to claws becomes stronger than it would have been if the other fearsome qualities had not been ancestrally associated with and reënforced it, unconscious and neuro-mechanical though this reënforcement be. Thus the recent studies that indicate that goslings reared by hens may not take to water, that kittens brought up alone do not kill mice, etc., does not show that they are born without the instinct and apparatus to do so, but only that in at least some cases a tiny jog is necessary to set it in action, just as the contact of air is needful to start up the respiratory apparatus in newborn babes, so that if they first entered a vacuum and with no change in temperature they would never learn to breathe. Some experimental embryologists now claim that every step of embryonic development is impelled by some outer mechanical, physical or chemical stimulus. But if this be so, the momentum of the whole innate mechanism of heredity is always behind to determine what that next step in the development shall be. Thus the answer to the critics of my view of hereditary fears which have been many and which are best set forth by Varendonck and Stekel is that transmitted fears are imageless, as a few introspectionists now think thought may be, but that they are nevertheless very real. Including the intense but commonly transient form of infantile fear, I estimate that all my returns in the last fifteen years on this subject comprise thousands and that there really may perhaps have been in the world as many phobias as there are nouns in the dictionary. Perhaps every object in the world (in one case the mother's breast) has been an object of unreasonably intense fear. It has even been said that a fear motive is a necessary ingredient for all interests. This itself shows that no specific images of fear objects are transmitted as such but only the complex apparatus of fear response. The house-cat fear apparatus is better developed

in us today because of the big cats, and the former have in turn helped to keep the big cat fear from dying out in us. The big ones made a larger place for house-cat fear than the latter could ever have made for themselves, and ailurophobia magnifies the dangerous qualities of the house-cat according to its intensity *as if* up the scale of size. The image of the cat does not swell to leonine dimensions, like the awful poodle in "Faust," but the reaction of the individual to one or more of the cat attributes tends to do just this. Individual experience assembles the cat qualities while racial experience intensifies certain of them beyond normal limits, so that the ailurophobe who always focusses on some trait may in the end readily come to fear the whole cat, though if we had an analysis of many cases, we should doubtless find that they had many different foci and we could then subclassify them by these. The cat image unifies all these traits and so they readily spread by association until they include more or less the *tout ensemble* of cat traits, following thus the same principle as that commonly used in applying names to objects, which first designated some salient attribute—man, e. g., as the upright-stander—but later coming to connote all attributes under the denotation of one.

MacDougall holds that certain birds inherit "immediately conditioned representations of the form of the nest," while to Stout the nest-building tendency is innate in the form of "a rudimentary conation, an actual tendency directed toward an end which is an end to the animal itself and does not merely appear as if it were so to the external observer." In other words, he thinks that meaning in this case is inherited and not merely a connection of blind dispositions. He would not accept von Hartmann's definition of instinct as acting according to a purpose with no knowledge of the purpose but holds that such behavior is more than organically innate. At any rate in all the often indistinguishable blends of born instincts acting for the first time, and experience, the animal always acts from the first *as if* it had an end in view. Some, like Stout, even hold to congenital attention and interest, although no one attempts to say precisely in what form any of these innatenesses are transmitted. I can recall no student of instinct who would not admit that cats inherit a more or less definite attitude toward mice, spiders to flies, hawks to chickens, etc. Are we not just as justified in assuming conversely that mice inherit a definite fear *anlage* toward cats, flies to spiders, chickens to hawks, etc.? Perhaps the victim's orientation towards its enemy may be a little less marked because the cat's impulse to

catch mice may have been more developed and more often exercised than that of the mice to escape the cat. There can surely be little doubt in such a case of inheritance of a function, whether or not it can ever be correlated with a definite neural structure and even though we do not know precisely its psychophysic mechanism.

We owe to Freud and his disciples and especially to A. Adler the insight that the preformation of about all psychoses and neuroses is found in childhood and infancy, but we know little of the laws of mutation from their childish up to their adult form. Cases in which an infantile phobia has persisted without change of object up into maturity are rare, while changes perhaps many from one object to another, are the rule, and accident may direct a phobia to a new object. We must assume some similarity between the relation of adulthood and childhood and that between the individual as a whole and the phylum, and the former relation may very often be used as a key to the latter and sometimes *vice versa*. Hence we should expect that the cases in which an ancestral fear has preserved its form in individuals of to-day would be as rare as the persistence of the rudimentary organ which has neither been transformed, eliminated, nor reduced. On the other hand, no one familiar with the facts doubts that a very generic and undifferentiated fearsomeness or *Angst* is inheritable. There must, however, be a scale and perhaps a long one ranging from a *summum gens* of *Angst* down to an *infamia species* of phobia, the specific differences, *e. g.*, between the types of cat phobia which may focus now on eyes, now on stealthy tread, or on smell or on leaping, each of which may be a fear fetish unconstellated with the others, and there may be an analogy in the way in which each of these traits reenforces the one that is in the focus and the way in which the relics of the ancient fear of the larger members of the cat tribe reenforces the phobia of pussy on the hearth. We have no good scale on which to measure the more generic and the more specific differences that geneticism needs. Only when we have this can we begin to show in detail in what degree all fears are regressions to childish states and begin to determine the phyletic equivalents of the fear components.

For the neuropathic disposition to know nothing is not to fear nothing, nor to fear all things (for true panphobia does not exist), but to fear without a definite object. Anxiety is not polymorphic but amorphic, and this is the state to which reversion tends and psychoanalysis, no matter from what specific phobia it starts, is not complete until it has traced it

back through all its mutable stages to general anxiety. Nor will its genetic exposition be complete until it has described all the stages of its development from this most generic form. To do this we must often have recourse to the phylum and its history. In Adler's laws of compensation we have a new method which will be found hardly less helpful in phyletic than it has already proved to be in the ontogenetic domain.

IX. *Ereuthophobia and its kin.* By far the most formidable enemies men have had have been other men. Hobbes postulated a primeval war of all against all. Everyone, he thought, had a primitive instinct to kill everyone he could. "*Homo lupus homini*;" "the devil take the hindermost," Nietzsche's ruthless will to power, Max Stirne's "I will get, be, do everything to maximize myself, no matter who suffers for pity is a disease," "I and my will, pleasure, passion, are supreme and I will subject everyone I can as an instrument to that end,"—these are modern echoes of a once all too real state. Only later, we are told, did man begin to learn the advantages of association in small and very gradually enlarging groups for the purposes of defense and aggression. Every stranger, and all, indeed, of whose good will man was not well assured, were feared. Mankind was then long composed of small bands of friends tried by and true to each other, and the rest of mankind were mortal foes. The fear which used to isolate these bands was a factor in nomadic life, made our forbears ever watchful for signs of other bands, whose mode of warfare was to steal up unawares, armed with the primitive clubs, points, edges, missiles, and this hostility of man to man was one and perhaps the chief factor that so long kept the human population of the globe from multiplying and made it both sparse and few. Thus down through and after the troglodyte age the world was very scantily peopled. The appearance of a single strange face or an eye staring through the thicket might well cause alarm if not consternation, for the most malign purpose and other hostile hands, armed with the most dreaded weapons, might lurk behind. Those dwelling in forests, caves, and amidst hills would be exposed to more urgent instant alarms of this kind than those in the open prairies, which were perhaps chosen by some tribes to mitigate the ever-present horror of sudden surprise by foes. Thus it was long before the pendulum of compensation began to swing to the opposite extreme and the foundations of hospitality to guests began to be laid.

Babies, true to the law of recapitulation, after the sixth or eighth month, still shudder, fear and turn away from new

faces, and only very gradually grow accustomed to strange persons, their looks and ways. The most tactful and insinuating guest has a long task in approaching, touching, giving attractive things, smiling, caressing, wheedling, before the child will come to or perhaps even before it will look his or her way, and in this process are many alternating moods and movements of both approach and retreat. Even in the familiar home circle a fixed, steady stare frightens and the etiquette of adult society taboos staring. Thus little boys tease little girls, and "Teacher, Johnny is looking at me," is a frequent complaint in our returns and many tots grow nervous, fidgety, and perhaps have symptoms if they feel any eye riveted upon them. Even the idea of God's all-seeing eye always watching, and the pictured eye upon the seal of the Odd Fellows sometimes give children marked creeps. Strangers, too, who stop to watch small groups of little children at play may chill their activities, make them self-conscious and often they instinctively drift away to a distance with but slight sense of why they do so. Some country boys in our data, seeing a stranger or even a known adult approaching on a lonely road make on some ostensive pretext a detour through the fields to avoid meeting him from sheer bashfulness. All children have manifold reserves towards new adult acquaintances, however well accredited, until they know them personally. Boys fight new boys and girls criticize new girls. I once visited a large insane asylum on the Bay of Naples and half the patients in the wards made the famous old gesture of the hand with first and fourth finger extended toward me, supposed to ward off the malign influence of my evil eye, and this was kept up until I was well out of sight. For the teacher with a good eye to look steadily at a boy in mischief is a strong deterrent. The glowering of two boys about to fight is one of the most impressive and perhaps determining factors in the whole encounter. The father of seven sons, whenever they quarreled made them stand four feet apart and look each other in the eye, which they generally found impossible to do long and their anger ended in a laugh. Staring each other out of countenance, until one pair of eyes falls or turns, is a contest in which the victory often goes to the strongest will. Looking steadfastly into a patient's eye is one of the most effective old ways of hypnotizing, and Heidenhain thought it so superior to others that he had hundreds of cheap glass eyes, and I once saw him pass down a line of soldiers in Breslau, giving each one of them to hold and fixate, and at the end of a few minutes a large proportion

were hypnotic. The eye betrays, and when we gaze into another's eye we seem to penetrate his very soul and conversely feel that others may thus read our inmost secrets. The eye with its concentric curves is the best and most attractive target for other eyes. It goes where attention goes. Young children trying to understand always look not at the mouth but at the eye of the speaker. For even a mother to make big eyes at her baby may cause *omatophobia*, with a compensatory laugh a little after as the fear is overcome, many of children's interests being the later stages of love casting out fear. The eye has its own language of love, hate and anger as well as of fear, which rhetoric and dramatic art often attempt to systematize.

Physiognomy reveals not only settled character but fleeting moods, making every kind of face possible, as a gymnastics of muscles and moods is sometimes prescribed as a mode of broadening and enriching the emotional life by playing lightly upon every note in its gamut, and we are often told that faces with little power of movement and mimesis go with a limited emotional life. One's face is often one's fortune or disaster. Caricature is often very clever in detecting and magnifying animal traits in human faces. Not only artificial expression, simpers, dimples, frowns, smirks that are sometimes almost grimaces, but often more permanent traits, may be thus intuitively read. Face painting is often made extremely suggestive among savages, while masks have played a great rôle in the history of all the feelings which man inspires in his fellow men. Primitive warriors often make up faces to augment their terror, and superstition thus makes more vivid appeal to the imagination, and art and religion add thus to their effectiveness. Young children often have a stage of fear of teeth (*odontophobia*), when friends first laugh so as to show an unusual amount of dental surface, screaming at their laugh or smile or if the teeth are gnashed or are shiny or false ones move a little. In the chapter on the development of the sense of self it is shown that children have periods of very special interest in the different parts and organs of their bodies, comparing with others, etc., and that they may have at least transient fear also of large or unusually formed noses and ears or peculiarly tousled or bristling hair. Thus the personal *rapport* which focusses in the eye irradiates to the face, head and even to form, dress and very particularly to movements and gestures, which have a long grammar, syntax, of their own which antedates speech, a part of which is natural and universal and part highly conventionalized. Vocalization,

too, has great power to attract and repel children, which adults, despite its influence upon them, which is usually far more than they realize, can hardly comprehend. Long before words are understood, timbre, pitch, cadence, modulation, accent, and speech music generally constitute a language of their own, which becomes less vivid and expressive as speech develops and becomes the language of the intellect, as the above modes of impartation and contagion communicate feelings. To an infant the same sentence may charm and soothe to sleep or excite the most acute fear, according to tempo, loudness, quality, its system of stresses, etc.

Thus, in fine, an individual with all his or her manifold properties of face, body, soul, movement, etc., may be hardly less a supreme object of fear than it may be of love, or in other words, as it is persons we love most so it is persons we fear most, and so it has been since man became man. The old fear and suspicion of those of our fellow-beings not well known or understood still lingers in all who harbor prejudices of race or even color, which are so persistent in us all, or feel aversion to customs, rites, religions, because they are strange and new (so that there are many correlations here with forms of neophobia) and it still lurks beneath the animosities of ranks, classes, parties, and creeds, which hinder the extension of sympathy, charity and philanthropy to cosmic dimensions and complete humanism, and it is these underlying ethnic or national aversions that wars fan into a consuming flame. Here are the deep instinctive bases of sympathy and antipathy.

Partridge¹ published returns from 36 males and 84 females in answer to a questionnaire on blushing (the phenomena as observed in others and flushing as felt by ourselves).² There seems little uniformity in the course of the blush. It may first suffuse the cheek and spread, or appear in small spots which fuse, and in some it spreads upward, in others downward, often covering the neck, ears, occasionally the arms, hands, chest, with now and then an alternation from redness to pallor. Blushing in the ear, which is often mentioned from Aristotle to Mosso, which it has been thought indicated close relation between the ear and the heart, may be connected with sudden acumination of sensation to auditory impressions. The causes of blushing in the above data are manifold, such as

¹ Blushing. *Ped. Sem.*, April, 1897, v. 4, pp. 387-94.

² A theme which Darwin (*Expression of the Emotions*), H. Campbell (*Morbid Blushing*), Wood (*Monographs*, 1890), Melinand (*Chautauquan*, 1893), Burgess (*Physiology and Mechanism of Blushing*, London, 1899), and W. S. Muller (1739) have also treated.

being spoken to, looked at, making a blunder, embarrassment, and very often the fear of blushing or its mere mention, although none blush so much in the dark. Sometimes tears, weakening, trembling, even of the hands, twitching of the eyes, accompanies it. As to flushing, the preliminary symptoms of it may be tremors, weakness, pressure in the chest, warmth, welling upward, unusual heart action, perhaps dizziness, tingling, numbness, globus, ringing in the ears, pressure in the head, and always self-consciousness and often confusion. Thus the blush is more than the mere local hyperemia which others see and involves usually profound disturbance of the vaso-motor function and vivid emotion. Flushing sensations, too, as distinct from blushing, almost always pass upward. This phenomenon thus means marked change in a distribution of the blood and its pressure, and as the phenomenon subsides it is more normally redistributed between surface and center or parts of the body, and tingling, sweating phenomena occur. The wave or flush of heat very often seems to begin in the chest and this conforms to what is known of the modifications of the mechanisms of circulation. Often stuttering, creepy sensations, cold "tweaks," noises of the ears, involuntary automatisms, and in general weakness, nervousness, occur. Very many girls blush at the course their thoughts take or blush when they are told they are blushing, when they make mistakes, are praised, excited, angry, introduced, talked about, meet people, are mortified, surprised, so that it is difficult to bring all the psychic causes of blushing into a single class. The most generic statement is that we blush when self-feeling is much or suddenly changed. Darwin (probably wrongly) thought the blush spread from the outside to the inside, where it brought confusion, but probably the internal excitation is primary. Some have compared blushing to a mild epilepsy and have especially called the epigastric phenomena cardiac aura. The shock element is always of course more or less involved. Campbell thinks nine-tenths of all blushes are from shyness and also that they are morbid. The only natural blush he thinks is from shame at discovered guilt. Melinand thinks that the chief cause of blushing is when we feel that mental states we wish to conceal are exposed or when others see in us what we desire to hide. Yet many blush not only when their faults and defects are revealed but when they are praised. There can be no doubt that the emotions underlying nearly all blushes are connected with fear. Partridge found that boys of ten or twelve blushed most when teased about certain girls. Blushing surely in-

creases at puberty with the enlargement of emotional life and the inwardization of consciousness. In Oriental marts where girls are sold those who blush bring the highest price, for it is considered in the female a mark of beauty, which cosmetics cannot ape or conceal. Many think that the blush was once very widely diffused over the body and often in savage women it spreads far below the neck so that selection may have narrowed its limits. Darwin thinks it is attention to a part that enhances the capillary activity involved and since the body was clothed the face has been the chief object of attention, and so most now blush there only, and when we are deprecated attention is most drawn to the face. Some think that it was once extended over the whole surface of the body and is a relic of general sex erethism that has drifted away from its origin, and also that sex selection has caused the narrowing of its limits, but why, then, is blushing unpleasant to so many? It is certainly far more common in females than in males of all ages and this strengthens the theory that the shame psychosis was its origin. It may have some deep and not yet understood connection with the origin of self-consciousness itself, as the concealment instincts spread from physical to moral and intellectual spheres.

Childhood necessarily involves more or less subordination to others, especially to adults. Children are small, weak and tender, and parents and others are sometimes cruel or do not adapt treatment of them to their degree of even physical development. Grown-ups at best may be formidable and their interests are strange abracadabra to the child. In a sense they are beings living in another world and child life goes on around their legs, sometimes as independently of them as if they were trees. They are bigger and stronger so when they intervene children have to get out of their way or conform. Bigger boys share some of this awe and may be objects of great dread if they are bullies, and older girls know so much and are so wise that they are often formidable. My returns abundantly illustrate all this. One English girl's greatest dread was being taken from the nursery to the drawing-room among grown-ups. Children are repressed in the presence of and often fear grave, solemn people, but still more so those with positive, decided or sharp manners. Many of them feel insignificant and oppressed and perhaps react by some hideously awkward or gawky deed or speech, or even lie in order to assert themselves. Others have a haunting dread of being laughed at and dread to go to places, do things, and would say black is white to escape this. Little girls often fear boys

because they may not be kind or would talk about them or even because they are not interested in what they do. Some have a morbid dread of being blamed, censured, of evoking displeasure, and divine what adults like and dread and this shapes all that they do when in their presence. Others would sacrifice anything to gain good will. We have boys who habitually play with girls because they fear the rougher ways of other boys. Some have a morbid fear lest they should even see a fight, still greater lest they should be attacked. Boys often shun wiser or older girls lest they should make fools of themselves, and occasionally they plan long beforehand what they shall do and say. Very many adopt what one or more adults like as their standard in the place of conscience. Some boys are not themselves when they have to meet girls, and we have many fantastic fears of others. Some when alone have a sudden sense that someone is present, turn about quickly, think they see a vanishing shadow, are confident they are not alone. If a door-knob does not turn, some dreadful person must be holding it on the other side. Some children think certain elderly women witches, with dangerous eyes. One girl's phobia was that boys should make hands like claws and claw at her. One laughs and cries hysterically by turns if the eyes of a person or animal are found fixed upon her. Many children of school age if addressed by a stranger blush, cast down their eyes, turn away, bite their fingernails, finger their aprons, and make various automatic movements, sidling away and becoming monosyllabic or perhaps utterly unable to speak or even answer questions. In our lists almost any peculiarity in others may excite fear in children:—black men, if they are not used to them, Gypsies, Chinamen, doctors, ugly, deformed people, ragmen, policemen, preachers, peddlers, and people with any marked and salient peculiarities of physique or character. They dread those with superior manners or those who dominate or dwarf them, have an abnormal dread of the possibilities of criticism. This shrinking instinct is not only obliterated but reacts into its opposite in the impudence of the street gamin. All these fears of others may have blushing as one of their chief traits; sometimes it is immediate, sometimes long delayed. In a few school children it has been so intense as to amount almost to vesication and to actually cause a rash afterward, and it may make children and adults recluses and even compelled to change a vocation. There is a sense of helplessness. The eyes blink, look askance or down, the head sinks, perhaps tears come, there are tinnitus, twitching, often awkward movements, the blusher gravitating to-

wards darkness. It is significant that in some languages the very word for blushing and fear is the same, as in the Swedish "*blygsel*." With blushing of psychic origin there is always a feeling of inferiority (A. Adler's *Minderwertigkeit* and in his sense). The instinct to avail and be esteemed suffers arrest. Self-esteem is wounded. The standing they aspired to or thought they had attained is set back. Where they thought themselves admirable, they appear ridiculous and perhaps the afflux of blood is the first impulse at Adler's organic compensation. If so, and if it is most often found in psychopaths or those handicapped by inferiorities, it shows that they are corrective impulsions. Yet on the other hand if self-consciousness is the muse of epistemology, why do we blush when the social form of it is suddenly intensified?

Pitres and Régis¹ make three classes of the fear of blushing: 1. Simple fear of it, when the patient thinks of it only while it lasts. 2. Emotional, when he thinks of it at other times but is not obsessed; and 3. True ereuthophobia. In the first case the patient may blush easily but does not care. In the second, emotional type, he is only disturbed. Out of their eight cases seven were men and all were with nervous, alcoholic or tuberculous or blushing inheritance, and themselves neurasthenic, with degenerative stigmata and apparently incurable. These patients often made great efforts to divert their minds from the thought of it, which almost always brought it on, and realized that drinking helped because it naturally reddens the face and so conceals the blushing as well as gives courage, and thus seven of these patients became drunkards. The authors thinks these cases confirm the Lange-James theory because they found conditions modifying blood pressure, such as very cold and hot water, made blushing impossible even when it was thought of, and that when the attack came suddenly there were first the organic impressions, and then the idea. They think the order is first, vaso-motor phenomena, then the emotional confusion, then the fixed idea. They had always blushed easily but it never troubled them until puberty, then it became associated with painful experiences, which developed the fear of it. Vaschide and Marchand² experimented upon a man of 38, of bad heredity, enuretic in childhood, later syphilitic, and as a soldier after an attack of dysentery was so obsessed that he went to an asylum. When married could not bear to look at his wife and since her death had never sought women because of his fear. His vasomotor irritability was such that after friction of the skin there was diffused redness. While most of his reflexes were normal, there was delicate trembling of the hands and tongue, delusions of persecution. He would be suddenly seized with the idea that he could not look at anybody without blushing and his character noticeably changed, and there were thoughts of suicide. He shaved himself because he could not endure having the barber look at him, never went to a restaurant.

¹ L'obsession de la rougeur (Ereuthrophobie). Arch. d. Neurol., 1897, v. 3, p. 1-25.

² A propos d'un cas d'ereuthrophobie. Rev. de Psychiatrie, N. S., v. 3, 1900, pp. 193-208.

and rarely went out in the day-time. Often in dreams his painful impressions of meeting people arose, and he blushed at the thought of callers. Thus he became more or less nocturnal, turned his back to people and sought courage by drinking. Being told a stranger was coming, the subject felt that he was already there, breathed more slowly and irregularly, with accented respiratory pauses. When the strangers entered there was general uneasiness, perspiration, change of temperature, tremor, especially in the hands, the cheeks grew red, respiration jerky, but he was helped by an elixir of paretic which made him normal. He showed two types of emotion. First there was the idea that some one would enter and then there was greater amplitude and speed of breathing. When one did enter the breathing was slower, quicker, stronger, irregular, and later he trembled so that the pulse could not be registered. The authors think fear of blushing is of cerebral origin so far as it is an emotion and that the neuro-vascular phenomena are never its cause. The patient changed from one obsession to another, from the fear of blushing to the fear of the power of the drug to prevent it. Claparède³ summarizes 40 cases, adding one. In these cases in 83% the phobia was found in other members of the family, and 95% were neuropathic. Often there was an original reflex tendency to blush easily, when the ensuing ridicule brought on the phobia. In other cases the phobia seemed first, but in both cases the real phobia did not develop until fear appeared. Thus blushing children are not always phobic but easily become so at puberty when self-consciousness is heightened. This occurred in 78% of his cases; 62% of them were men and he thinks that while women blush easier man dread to do so more because it is thought to be a sign of cowardice. Melinand⁴ gives as the causes of blushing, modesty, shame, timidity and confusion, all referable to the one fear that some one will see what we wish to conceal. For instance, when we are praised we love it and long for more but do not wish others to know our vanity or fear their ridicule if they detect it, and then fancy they detect it and then blush. A young girl hears an improper word, understands and is troubled by it, but wishes to conceal her disturbance because she knows that she is not supposed to understand such words. But she feels others are looking at her, fancies they are guessing her guilty knowledge, and so blushes. The man who suddenly realizes that he is not alone as he had thought fears that he has revealed by a movement or muttered word that which he would not, and so blushes. If this is true, the removal of the fear of concealment would also remove the blush as it in fact does. Lovers do not blush with one another or when alone. Babies up to two or three years do not blush, nor idiots below a certain grade of intelligence. Women and adolescents blush more than men, and adults because they are conscious of more to conceal, while conversely old men blush little and less than seeing people. These studies and those of Mossé⁵ and Hirschlaaff⁶ show the correlation of flushing with nutritive dis-

³ L'obsession de la rougeur. *Arch. de Psychol.*, 1902, v. 1, pp. 307-334; v. 2, pp. 60-61.

⁴ Le sentiment de la peur. *La Revue*, 1901, v. 39, pp. 526-536.

⁵ Fear; tr. from the 5th ed. of the Italian by E. L. Kiesow and F. Kiesow. N. Y., Longmans, Green, 1896. 278 pp.

⁶ Über die Furcht der Kinder. *Zts. f. päd. Psychol.*, 1901, v. 3, pp. 296-315; 1902, v. 4, pp. 39-56; 141-156.

turbance of the organs and the brain, which is compensated by increased effusion of blood most marked in the head, which may contain one-fifth of all the blood, and in a horizontal position any strong feeling makes the head heavier and the limbs lighter. Many change their vocations on account of this habit. It expresses emotional instability and may go with bashfulness, stammering, clumsiness, awkwardness, and makes many a bright child seem stupid. It may rest on an unsatisfied need of freedom. It closes the soul to others, and Dugas thinks, but Hartenburg denies, inclines its victim to be egoistic, idealistic, artistic, a literary man or poet, or in a word a subjectivist generally. Rousseau and Amiel were striking instances. There are usually alternate stages of increase and diminution. Hartenberg⁷ discusses the organic basis of erythrophobia from six cases, in which he finds cardiac erythema, large carotids, low arterial pressure, marked demographism, and tendency to perspire. He notes that the phobia develops as a result of painful social experiences and thinks that where a cure occurs, which is rare, it is generally by bracing treatment.

Luzenberger⁸ first discusses the various names which have been applied to the phenomenon in different languages. In the collective literature of the subject he finds about sixty cases, to which he gives references. The majority of cases occur in men and the phobia seems to be of comparatively rare occurrence, as Janet found only 5 cases in 325 individuals affected with psychasthenic obsessions. It seems to be more intense at puberty and in women also at the menopause. The phenomenology is almost identical in all the cases described. Blushing at some time becomes an embarrassment to the individual. He is affected more promptly and intensely in the presence of strangers or of those who look at him, and is less affected among intimates. The phenomena give him a sense of moral inferiority, of embarrassment and confusion (which is also the case in physiological blushing). In consequence of this anxiety arises. In more advanced cases the anxiety in regard to blushing becomes the predominant feeling. Sometimes this anxious preoccupation becomes so pronounced as to modify the character of the person affected and to render him fearful of appearing in public and he becomes always anxious to conceal his face. As to the mechanism of blushing the author concludes first, that the central reflexes for vaso-motor action are situated in the ganglia of the sympathetic system, and in consequence of this every thought is accompanied by an emotion, and every emotion by a thought in consequence of the connection with the cortical centers. Second, the vaso-paralytic dilation of the face, both in the zoological scale and in the primordial grades of infantile life in the human species, may be an expression of anger, in which case the blushing is the more marked the more marked the anger becomes. Third, that in consequence of acquired social restraints hindering a free vent for this, blushing can arise from repressed anger, thus becoming intimately interwoven in an associative synthesis. Fourth, that shame comes to be joined to blushing in accordance with the degree to which the child has been taught to conceal certain parts of the body and attend to bodily needs in private. Fifth, that therefore in the development of

⁷ *La Presse Med.* 1911, pp. 140-141.

⁸ A proposito dell' erytofobia; contributo allo studio del meccanismo delle idee fisse e considerazioni psicologiche. *Ann. di Nevrol.*, 1903. Vol. 21, pp. 267-293.

ereuthophobia as a phenomenon of obsession or an obsessional neurosis, the sexual facts of infancy have a great predisposing influence. The author then discusses the various theories of emotions and comes to the conclusion that in emotions whose origin in ontogenesis must always be sought in physical pain or pleasure perceived in early infancy by excitements coming from the non-ego (whether this is referred to the external world or its own viscera), the principal part must be ascribed to the associative function, and this is precisely the reason that its manifestations are so complex. This conclusion in regard to the emotions leads the author to attribute very great importance to inhibitory and dynamogenic associations in the interpretation of mental obsessions, and to accept the Freudian theory of psychoanalysis as the means best calculated for arriving at the true significance of the phenomena.

Soukhanoff⁹ gives Hartenberg¹⁰ credit for first characterizing *phobie du regard*. The cases which the latter described do not always blush but may show nearly every symptom of fear, fear of eyes fixed on their face. Bechterew¹¹ thought this an obsession of timidity, almost always on the basis of degeneracy, with sexual and other anomalies, while Soukhanoff traces it to an "ideo-obsessive constitution." His best case, a young man of 24, found it impossible to think or to fix his attention, became greatly confused in the presence of others, lost his spirits, was scrupulous, indecisive, and all seems to be due to the habit of masturbation formed at the age of 15. Being conscious of obscene thoughts, he feared others would detect his unworthiness. In such cases the nervous system is generally impressionable and unstable. It is prone to occur in young people especially in primary juvenile dementia. Règnier¹² concludes that ereuthophobia develops more often a degenerate basis, especially hystero-neurasthenic or other neuroses, and that in this way it develops both greater tenacity and more emphasis. He pleads that medico-legally ereuthophobes should be regarded as persons with only attenuated responsibility because in the crisis of blushing they are liable to commit acts of violence of which they are not conscious.

Fear of being looked at or *Phobie du regard*, may be closely connected with ereuthophobia but is by no means always so. The former may rise from a sense of guilt and especially some consciousness of sex irregularity, abnormality, bodily deformity or ugliness. Its more general form is morbid shyness, which Campbell discusses and thinks common in nervous people and connected with eccentricities; shyness he says is simply "the soul shuddering to feel itself naked" and it does not necessarily involve distrust of self or meekness. It does, however, involve excessive self-consciousness and sensitiveness to the opinion of others. Hartenberg notes that where *phobie du regard* exists it is most painful to have the face looked at and most of all the eye, so that every device to prevent this, such as covering the face with the hands, newspaper, veil, etc., is resorted to. The Empress of Austria, who suffered from this phobia, was never seen without a

⁹ *Phobie du regard*. *Jour. f. Psychol. u. Neurology*, 1906, Bd. 6, pp. 241-247.

¹⁰ *La phobie du regard*. *Arch. de Neurologie*, 1904, N. 105, September.

¹¹ *La phobie du regard d'autrui*. *Médecin russe*, 1905, N. 3.

¹² *De L'Ereuthophobie*. Thesis. Paris, 1896.

parasol or umbrella. Bechterew¹³ also notes the focussing of this feeling in the eyes and stresses bad heredity as its organic basis and masturbation as a very common determining cause. Sometimes it appears only when unusual exposure of the body is necessary, in others when those who have practised masturbation suddenly realize its evil effects, or think that their badness is betrayed to others. Sometimes being looked at causes strong contraction of the pupils and the patient cannot look at anyone without casting down the eyes, and very often there is some trace of the old superstition of the evil eye. Bechterew gives a few cases in some detail. In some there are many stigmata of degeneration, while in others there seem to be few or none, and the phobia seems to be pretty pure. In others it is associated with various other fears. Its patients can escape its attack by concentration of attention as upon their work. In acute cases they seem to grow silent, distrustful dreamy and idle.

Luzenberger¹⁴ analyzed a case of morbid fear of blushing due to shame in a woman who came to him in the fifties. Analysis showed that this really went back to a strange helmenophobia, which dated back to proclivity to worms, which she sometimes used to void. This led her to often look back and even to retrace her steps, lest she had left some such unpleasant trace behind. After she married her anxiety increased and her scruples and habits in this regard made her husband suspicious, and then when she realized the base but unjustified nature of his suspicions, she began to blush until this symptom became fixed and supreme and in her consciousness eclipsed all others. She blushed because her trouble was so secret and because she was reluctant to tell its cause he thought her guilty. It was years after her husband died that she came to the physician with this symptom of ereuthophobia most acute. The author deems this case a complex that is primarily based not on sex shame but on the older, very primitive and even animal instinct to cover excrements. Some primitive races too cover only the anal aperture and not the pudenda and show acute shame only if the former and not the latter are exposed. Luzenberger intimates that the shame that preceded sex shame and perhaps the very first shame was that of one's own excrements, which are universal objects of loathing and disgust, and which must be put out of the way for that reason and because they serve as spoor to expose the individual to his foes, who could thus follow his trail. It was in this domain upon this view that the first blushing arose. Moreover, various primitive races cover the posterior and not the anterior organs and this gives some color to the view that sex shame was derived and secondary. We know that all flushings spread upward and never downward, and on this view blushing in the face is a late development, following the Freudian law, "*von unten nach oben*." This general view cannot be rightly evaluated without a far more careful study of the way in which human ordure, solid and fluid, has been regarded by mankind in the past and by savages in the present, as set forth in Bourke's "*Scatalogical Rites*." Here we touch but can only glance at the new vein of study opened by Freudians as anal eroticism. This view of the genesis of shame needs to be correlated not only with the many facts in this field and the study of the sacred

¹³ Die Scheu vor fremden Blicke; Centralbl. f. Nervenhk. u. Psychiatr., N. F., 1902, 13:160-167. Also Neurol. Centralbl., 1897, 326-7; 386-9; 985-91.

¹⁴ Centralbl. f. Psychoanalyse, May-June, 1911, pp. 304-7.

rites therewith connected, but with the instinct of which modern hygiene has lately developed a body of knowledge and the new sources of danger, hookworm and others, that center about out-houses, concerning which Stiles, perhaps the best expert, tells us that we Americans are the filthiest people in the world. We have at present here only a vague though extremely interesting suggestion, repulsive as the field is into which it takes us, a suggestion that greatly needs and invites more extended scientific treatment.

How far is blushing due to old sex fears? To be stared at by men has for ages been for woman a prelude to assault, we are told, and this dread of ancient rapes is transmitted to man blushers. In the modern masher we see only a vestige of its cause. Very different from this is the other sex theory, which regards the blush as attenuated and drifted fragment of sex erethism. If we combine these two we have a factor both of desire and of fear as its root. That both these sex factors do still often enter into the unconscious motivations of it psychoanalysis seems to leave no doubt. But no one claims that blushers are more sexual than non-blushers, and there can be little doubt that blushing has psychic causes that are non-sexual. Its most generic cause seems to be a sudden change, real or fancied, in the way in which others regard us. A too frank compliment, a sense that we have betrayed something we want to conceal and that our give-away would cause censure or criticism, rob us of some advantage we have over others or violate social convention,—these are its most common causes among adults. If some one we thought a friend or even a lover suddenly stands forth as an enemy, or vice versa, or one we thought neutral suddenly appears as either of the above, we flush inwardly if we do not visibly blush. The ereuthrophobe is hypersensitized to such changes of personal amity or animosity even by anticipation. He expects every meeting will involve some change on this scale. His very blushing will cause disparagement because it betrays his anxiety, which he knows to be excessive and would hide. It humiliates him to have it suspected that he is so dependent on the transient good or ill will of others. His flushing may denote the irrigation of the apparatus of defense. We blush when the call of defense toward the good will of others is suddenly lost either way, an insult or attack on the one hand and a declaration of love on the other being the extreme. We love to see others blush, not only because the color is itself aesthetic and also suggests vitality, but also because it shows in a way delightful to our egoism how sensitive others are to our feelings about them. Thus the blusher enhances sometimes exquisitely the self-feeling of the person

before whom he blushes, and here teasing reveals one of its chief motivations.

Blushing is a most interesting and ostensive illustration of how gregarious man's relation to his fellow man affects circulation. His dearest wish is esteem, fame, and to maximize himself generally in his human milieu, and his greatest dread is disgrace, social outlawry, and general hate. Flushing is a factor of two variables, first the degree of keenness of consciousness of things to be concealed, and second, a sense that they have been betrayed, the latter of course varying with the kind, amount and suddenness of the betrayal. We are now mortified at moral exposures because we used to blush at the exposure of things of which these are symbols or sublimations. Man's dread of blood freshets has always prompted many mechanisms to check and repress them. Very likely it was once correlated with horripilation and has come in with the loss of hair from man's body, and is most intense where he first lost his hirsute coat. It is a little as if the first bare spots were those where man first felt shame or the first cold spots which needed the warm afflux of blood, although this view is by no means as yet fully made out. It would be an obvious advantage to have the blood go where it was most needed, and this is not now in the skin, for its excessive afflux there leaves the functions and organs that need it unirrigated, if it does not divert it from them, and so causes confusion, weakness, etc. All psychophysic motivations, then, that sent the currents inward and aright have always been a great advantage in the struggle for survival. Depilation and later the development of clothing have vastly reduced the vascular activity of the skin, and made blood freshets more inward and also more effective. When man was naked, and still more when he was hairy, his skin had far greater vascular activity to regulate temperature and also to preserve his hairy coat, and now psychic tensions may revive this ancient vascularity in certain spots and special times by way of reversion. This is not sexual. Moreover sex erethism attracts and does not drive blood away to distant parts. Again, each sex blushes before members of the same sex, and once more sex theorists disagree as to whether sex-flushing means desire or dread. We never blush before gods, animals, or inanimate objects, but only before members of our own species or at thought of them. Finally, there is some reason to think that shame of anal precedes shame of sex acts and functions, as nutrition antedates reproduction. Morbid blushing is a rudimentary phenomenon that goes with hypertrophied self-

consciousness before others. It is unpurposive and anti-selective, may be therapeutically reducible by reducing anxiety and over-evolved self-feeling, increasing well-based self-confidence. It does not conform to the Lange-James formula, for we blush because we are ashamed long before we come to be ashamed because we blush.

X. Pathophobias. Mental anorexia is loss of the psychic representation or concept of hunger and appetite so that the patient is unable to want to eat, however much he may need to do so. It may begin in grief, in voluntary and perhaps religious fasting, in restriction of diet because of poverty or economy, dietary theories, or very often as a result of medical prescriptions, and, in neuropaths, having started it very readily becomes involuntary, habitual and extreme. It may result in great emaciation or loss of a third, sometimes even half, of the initial body weight in a few months. It is on the bases of such pseudo-dyspepsias or false gastropathies that the many alimentary phobias arise. This state may even come as a reaction to false mental hunger that impels to excessive eating. These phobias may focus on special articles of food or drink and also upon nearly any and every stage in the entire nutritive process. The elective anorexic phobias often begin in the giving up of dishes that the patients believe have disagreed with them, and these phobic obsessions of purely psychic and emotional origin are commonest in young women. Some cannot bear the sight, smell, touch or taste of the tabooed article, or the patient may chew only with the very greatest difficulty and for a long time, trying to get courage to swallow, which perhaps in the end he will not dare to do. There is often excessive or sometimes defective salivation, fear that they may swallow the wrong way or that the mouthful is too large, may contain a bone or some toxic element (a peculiar taste being fancied), that the food will burn or irritate the throat, and when at last they muster courage to try to swallow, there may be a spasm of the oesophagus or pharynx. Thus any incident, a sore throat, some slight unpleasant experience with food, a shock while in the act, a little aerophagic experience, may start the morbid psychic fixation so that the patient comes to react to wholesome food somewhat as a child would to a nauseous pill.

Going down the alimentary canal the false gastropaths, following Dejerines' terms, are always thinking of their stomach and may show about all the semeiology of real stomach troubles by auto- and hetero-suggestion. Any emotion, fear, anger, a sense of sin, that can clutch the throat or affect digestion or

the bowels, may upset the stomach and bring nausea and distress that, like the dysphagias, are purely psychopathic. Moreover it causes trouble and effort to get oneself fed, and as appetite, as the Pawlow school have shown, is the chief stimulus to digestion, the stomach balks when it is gone, and there may be regurgitation, flatulence, heartburn, and these experiences cause phobias and obsessions to anchor about the gastric stages of digestion. Foods are classified, eating made very methodic, restrictions increase,—all perhaps that the patient may do better or more work. Every new book or theory of dietetics and every doctor consulted irradiate new suggestions that reënforce and give a more definite form to such fears. One can eat nothing hot, another nothing cold, one only solid, another only liquid food, the vegetarian may acquire a horror of meats, and with fads almost always go phobias. Thus patients often come to restrict their eating more and more (one lady came to only painting her lips with a tiny brush dipped in sweetened water), while with others the restrictions are chiefly qualitative. Of course these phobias may be based upon organic troubles, but in Dejerine's experience three-quarters of all such cases are neuropathic and not organic, and to this his many marvelously speedy and complete cures seem to bear witness. Being of purely psychic origin they only yield to a purely psychic therapy. Trouble, alcoholism, and particularly prescriptions by physicians who do not realize the psychic nature of these troubles, start patients on the downward course and make them conscious of their digestion, and these and their own misinterpretation of their symptoms do the rest. And even gastric atony and distention perhaps to twice the normal size, with all their sequelae of fermentation and auto-intoxication, may follow from purely psychic causes. Again nausea and vomiting may come to result from almost any experience, from slight hyperagousia to the fixed idea that we cannot digest. Thus there are not merely many psychic causes but many degrees of intensity in the working of each, e. g., from slight loss of appetite through mericism and rumination to violent retching, that may be the starting points of phobias, while false cardiopathies, vertigo, etc., add their own quota.

Phobias of diarrhoea often arise from a single accident of self-soiling which in extreme cases may come to control the entire life of the victim, while constipation phobias on the other hand arise most often in patients suffering from hemorrhoids or circulatory troubles who have been warned against obstipation. First comes the state, then the phobia, which

latter plays a pathogenic rôle of its own. The discomfort of the process, hurry, laziness, the habit of using enemata or even rectal suppositories, may inhibit the sense of needing to visit the closet, or patients habitually neglect the moment of inspiration and so the habit with all its evils, nutritive and even sexual, is established, and all these symptoms, if phobias arise either way, are greatly reënforced. Purely psychic enterites and especially of late appendicites have become common and even membranous enterocolitis with glairy, mucous stools, and perhaps the characteristic false membranes that are usually harmless defences against constipation, become foci of morbid attention, and phobias which may make sensations normally hardly perceptible acutely painful. Curiously enough one visceral phobia may supplant another, the dread which has focussed, e. g., on the bladder changing to the fixed idea of a floating kidney, or the mental representation of polyuria which involves polydypsia (which in some cases have impelled patients to drink as much as thirty quarts a day) passing over to anuria and sitophobia, which may arise from medical advice to patients seeking an anti-fat cure not to drink too much. So, too, frequent or too long delayed micturition may both of them be cerebrally cultivated and take on an obsessive or phobiac character. There are true phobias of urinary incontinence and pollakiuria which is very contagious. The function of the kidneys and of the bladder is peculiarly susceptible to the influence of emotion, and with these are often associated fictive disorders of the prostate, which sometimes develops a phobia itself.

Thus all the functions of the alimentary canal and its annexes which normally work without consciousness are impaired if it invades their domain. The general mechanism is always the same. An accident, slight pain, ailment, the hetero-suggestion calls attention to the part or function which intensely magnifies the sensations arising from them, and makes them often painful and hence awakens a dread of recurrence which may darken into a phobia while the effort to prevent the painful function becomes obsessive. *Why do the false and purely psychic disorders of these, as indeed of all other systems of the body, so closely resemble cases that are organic, so that even physicians often fatally mistake the former for the latter?* Is this fully explained by saying that the patient has heard, read, seen enough of diseases so that he unconsciously simulates the one he fancies he has? Neurotic patients are far more astute than their physicians or even than they themselves know, often acting out syndromes with strik-

ing reality so that the methods of distinguishing nervous from organic symptom groups or morbid entities are often quite inadequate. But how can the nervous system reproduce the symptoms of so many real diseases with such striking verisimilitude? Must we not raise the question whether the nervous system, the chief function of which is to record traces of past experience, has among its rich stores of them certain disease patterns more or less individualized, inherited from the long experience of the phylum, which enables even young and ignorant neuropathic girls to reënact the rôles of certain specific diseases intuitively and *a priori* in a way often very like the reality. On this view they act as if they had e. g. real pyloric stenosis or obstruction of the intestine, etc., better than they would if their forbears had not actually suffered from these diseases. The stomach and bowels have completely outgrown these disorders and heredity has left no trace of ancestral experience in them, but the effects they registered upon the nervous system have not been all erased. Attention to a part once the seat of these diseases may awaken echoes or reverberations and so these patients have again the neural part of the disease, the nervous now being primary, whereas originally it was secondary. Moreover still further back all these functions, while they were being originally established, involved a relatively greater psychic factor which also coöperated in developing immunity from diseases and then having done its work so wisely and well, retreated as higher functions absorbed its activities. But in the psychotic and neurotic fancies of these diseases the old dominance of the neuropsychic factor comes back, so that all the phobias represent excessive dread of devolutionary regression, and our revolt is again repeating the old, mostly outgrown pathological conditions during the stages when these processes were being given the autistic perfection which they now have in normal life. Not only may the nervous system and the psyche have diseases in which the rest of the body shares only in a secondary and purely functional way, but neurotics who either greatly desire or fear maternity may exhibit about all the symptoms of pregnancy:—spells of nausea, suppression of courses, gradual enlargement of breasts and abdomen, tympanism, etc., so that physicians are sometimes deceived. Occasionally it comes even to false parturition pains. Of this series of purely psychic phenomena there are all grades, from a few faint transient symptoms to those which are really too long prolonged and intense to be true to fact, and all may be motivated by many kinds and degrees of auto- and hetero-suggestion. Some

of these psychogenic cases regulate their diet and regimen, prepare clothing for the expected baby, and in a few very rare cases of delusional insanity not only believe they have experienced all the details of confinement but that they have borne a child that has died or been sequestered, and fiction has even made such an imaginary mother accept a real baby brought in at the critical moment, try to nurse it and rear it as her own, while a dement seemed to accept a big doll and to minister to it for months as if it were really her own, until her psyche, as she showed signs of improvement, managed to have it sicken, die and be buried. Thus neuropathic mental representation may vicariate for real motherhood, sometimes even in chaste and unwed women, so great is the power of the cerebral spinal system and the half-unconscious psyche conserves the ability to reënact racial experience.

Once more, patients who have had and been cured of real diseases often continue to be ill in mind. The spirits, mode of life, and even diet of illness persist after complete convalescence. Their mental and moral life and aptitudes remain those of their period of invalidism. The habits of the disease persist and a perhaps long period of purely functional or imaginary *Abklingen* of these phobiac symptoms, and psychotherapy and reëducation are necessary after they are physically well to complete the mental cure. Perhaps the obsession is grafted on some slight passing real symptom, and the patient seems to really have the disease, which is in fact three-fourths psychogenetic. The real symptom becomes a fixation point and when it has vanished the organ or function continues as at least a *point de repère* of a trouble that at first was only fictive. Such cases must, of course, not be confused with hysterical affections of illness in which the patient so enjoys the luxury of being sick and ministered to or an object of sympathy and tenderness. Probably few if any organic troubles do not have functional complications somewhat proportionate to the neuroticism of the patient grafted upon them, just as conversely imaginary ills may bring real functional disturbances, but the fact that a very slight or a spent disease, which has been recovered from, causes in the psychotic constitution so many syndromes of a purely psychic character that often long outlast and often transcend their cause, points to a facilitization or peculiar predisposition in the psychophysic system due to ancestral experiences with disease, while the verisimilitude of the false to the true cannot all be explained by any Freudian hysterical disposition to take flight from reality into sickness, nor by the

tendency of psychopaths to put all they have gathered from reading, doctors, conversation and suggestion into practise. We must rather consider some if not most of these fear-bred symptom complexes as both reënforced and directed as to their character and complications by more or less innate results of racial experience with man's great enemy, disease. Sound though other organs and functions may be, the vestiges of our forbears' distempers are not entirely eradicated from our psychophysic system where they persist latently, ready to become patent upon slight occasion, while in neuro- and psychopaths they easily come to play the leading and even the only rôle. The one most infallible trait which distinguishes their fictitious character from the somatic troubles they simulate is the fact that they yield to correct psychotherapy, in which the vital truth concealed in many crude cults, from Shamanism to Christian Science, New Thought and Emmanuelism is now being revealed in its true light in the field of psychological medicine.

Laryngeal phobias are not uncommon among singers, actors, teachers, orators, etc. Some very slight hoarseness or aphonia that reduces the volume or slightly modifies the timbre of the voice causes such patients to constantly wrap their throats, use pastilles, respirators and their preoccupation with fancied dangers to their voice may bring asynergy or a "phantom voice," all of which of course has nothing to do with hysterical mutism. The state of intense mental interest reduces also both the depth and frequency of respiration until this shallow breathing is compensated for by deep inhalation or sighing. This functional apnoea or reduction of vital capacity thus is from a purely emotional cause which may also even bring about false asthma and short, rapid breathing or polypnoea with sensations of suffocation, which are so often the physiological basis of wild panics or which may result in a settled fear of heart trouble. Again, real thoracic pains may bring a fear that outlasts them. Dejerine makes false pulmones a class of phobiacs by themselves. They interpret even the faintest algias as incipient tuberculosis, grippe, bronchitis, etc., while the precautions of others who have morbid dread of catching cold or of hemorrhages would fill a volume. Some veritable phobias of hiccoughs are recorded.

The heart and circulation, as all know, respond exquisitely to psychic states under the influence of which the heart may slow down toward syncope or rise in extreme cases to nearly thrice its number of beats normal in a state of rest. Palpitation and arhythmic action often rouse phobias. Auscultation,

especially if not performed with the greatest precautions, makes settled cardiphobiacs, and if the doctor admits the faintest haemic murmur it is often quite enough to implant a pathogenic fear of valvular lesion or defect. Often the dread starts from some unusual modification of the heart's action by strong and sudden feeling. Among vascular phobias we have not only blushing but now a new phobia of arteriosclerosis, if blood pressure or tension changes a little. During puberty heart and blood vessels often grow and otherwise change disproportionately for a time, and our records contain many confessions of young people who have for years watched their hearts, especially on going to sleep, feeling their pulse and dreading sudden death from the balking of the usually most reliable of all organs. Not a few have real symptoms which soon pass away, leaving only a nervous predisposition to excessive fear later on the slightest occasion or suggestion. That the psyche can influence the skin is seen in horripilation, flushing, paling, and even in stigmatization. Phobias of dermal roughness often occur in children, who pick scabs, pimples and try to smooth away every slight roughness of the skin, perhaps by the phyletic momentum of the processes that led to the depilation of man's originally hairy body. A case of actual vesication was reported in Paris in a patient in hypnosis who was told that she was undergoing moxa. Babinski thinks inner tissues may be no less affected trophically, and in vaso-motor and functional ways, by psychic states. Skin phobiacs are always on the look-out for every redness, slight discoloration, pustule or itch, perhaps lest it herald syphilis, or their dread may be fixed upon perspiring too much or not enough, being too hot or too cold, and one with a phobia for drafts is reported to have caught cold from having to sit near a door afterwards found to be a sham one. Neurasthenics also often have an acute dread of fatigue. At the faintest sense of weariness they stop. But fatigue is chiefly in proportion to the consciousness of effort, and patients interested and absorbed in whatever they are doing, are very hard to tire out. One patient unable to hold up her arms three seconds could and did hold them up an hour a day in a far more tiring position to dress her hair. One who could not walk five minutes, walked over an hour talking with the doctor about his troubles. Such patients may be obsessed by the memory of some real fatigue in the past and thus may become phobic for everything that ever tired them. To do acts with dread causes us to stiffen, tense up, make greater effort, bring in muscles less directly concerned with the act, and if we try

too hard in this way to do our best we fail to do even well. This unwilling effort may cause tremors or choreiform movements and sometimes contractures and even paralysis. Some contractures are those of defense which persist in thought long after the occasion which caused them. Thus obsession may fix on almost any part or function of the neuro-muscular system, often even on those portions of it that are not under the control of the will. Some contractures are clearly due to the persistence of thoughts of defense and are cured only when the patient ceases to fear. Other motor disturbances are due to instinctive attempts to correct vicious attitudes. Babinski holds that a special act of the will is necessary to relax a muscle and that it is this act which is lacking in contractures, which may persist in sleep, though rarely in complete narcosis. Some functional paralyses may be due to non-intentional suppression of motor power but all this must be distinguished from hysteria, especially the cultivated professional kinds sometimes developed in old hospital cases who can have acute symptoms of fatigue, chorea, tremors, as well as paralyses and contractures at will or as their doctor suggests. Some of them seem to acquire the power to act out and even to feel about any extreme emotional state they list, and among these pseudo-emotions, probably the most dramatic of them all, fear leads.

The emotions profoundly influence general sensibility. In battle or under the influence of religious excitement, as in the case of martyrs, wounds are not felt, and conversely psychic reënforcement may bring not only diffuse but sharply localized an- or hyper-aesthesias. In psychic cases the dermal topographic disorders due to simulation rarely follow the anatomical distribution of the sensory nerves, and this shows that the absence of pain is more perceptual than sensory. Topalgias too are often visceral and these fixations of the idea of pain start up phobias of disease in the organs focussed on. Optic phobias, too, are of many kinds, and may take the form of dread of fatigue, of strong lights, especially colors, specific diseases, a foreign body in the eye, and also patients may come to think they cannot read without frequent rests, by closing the eyes, they carry glasses of different colors and strengths and change them, fuss with light, shades, perhaps shut themselves in dark rooms, use various lotions, all perhaps psychically caused by applying too much effort and attention to ocular functions that should work unconsciously and automatically. Functional narrowing of the field of vision is often really only the narrowing of the field of

visual consciousness. So deafness may be of psychic origin from both lack and excess of attention. When talked or read to repetitions are often called for because anxiety tends to distraction by fixation upon the patient's own bad feelings, or there is morbid irritability to noises from the same cause and over-sensitiveness to drumming and humming in the ear, due to circulation, all of which tend to phobias which are the expression and result of irritable weakness, so common in states of reduced health and cachexia. So in the field of smell, perception and not sensation may be suppressed, and nose-bleed or epistaxis and hyperrhoea may be due to phobic suggestion the latter sometimes being due only to the mild shock of realizing that the handkerchief is forgotten. Other obsessions are that one breathes better through one nostril than the other, or that both are slightly constricted, while some are haunted by odors. Gustation and appetite too are profoundly modified by general affective states of mind, and food in general or special foods lose their characteristic tastes or it is so modified as to suggest adulterations, unwholesomeness or even poison.

Thus while it would be far beyond bounds to say that there are as many phobias as there are kinds of sensations or perception, the mechanisms exist which might make about every one of the thousands of distinguishable sensations an object of fear and perhaps an expert clinical analyst might safely bet that he could with time and patience enough develop about any sensation into an object of a true phobia in a suggestible and neurotic patient or perhaps in the vast variety of nature somewhere, sometime all sensations have been. Let the sensation or the perception or even its immediate association be made habitually painful and the phobia is inevitable because instinctive and the repressive or defensive mechanism is sure to be set in action. Nowhere does the danger of the interference of consciousness in the operation of reflex automatic and instinctive processes appear more clearly. Necessary and effective as psychoanalysis shows this process of conscientization often to be for re-education, it suggests again the momentous conclusion that consciousness itself is essentially a therapeutic and remedial agency with potencies hitherto undreamed of in this direction because wrongly conceived of. But we must not forget that consciousness always brings dangers also hitherto unknown in its train, for it has strange power to inhibit and to hypertrophy almost every organic, motor and sensory activity. Hence it is that there is always a resistance born of fear in going below the threshold to

explore the unconscious and this resistance has many manifestations all the way from the instinct that prompts patients to be reserved to physicians up to the refusal of many psychologists to admit even the reality of unconscious psychic processes.

The point is that about any and every organ or function may become a center of phobiac fixation. One patient comes to fear he cannot go to sleep and regulates his regimen and life during the day in a way which he thinks will favor sleep, developing perhaps many and intricate methods of letting down the psychic tension of the day to the level of the "disinterestedness" which Claparède conceives to be the essence of sleep. He fancies he does not sleep hours enough or not soundly, dreams too much, perhaps modifies the conditions of his sleep, the bed is too hard or soft, the covering too light or heavy, the room too cold or warm, or he may come to rely on eating, drinking, exercise, bathing, rubbing, etc., upon retiring, and the systematization may include phobias of noise and light. Such insomnia must always find a cause for their wakefulness. Perhaps they fancy they are too tired or ascribe their state to late hours, or are obsessed by a morbid dread of emissions, or of starting or jumping and other spontaneous phenomena. Thus they come to watch themselves go to sleep and pass upon the normality of the process, and while they are coaxing themselves to sleep, on waking introspect very carefully to see if they can recall dreams before they fade, and if they can think their sleep has not rested them. Some are haunted by some specific fear like that of a stroke or heart failure, while a heavy supper and any alimentary disturbance or some slight noise may rouse them suddenly to an acute state of wakefulness and dread. Thus we have phobias of sleep itself and also far more commonly its opposite, the dread of sleeplessness (see section on *pavor nocturnus*). Insomnia also predisposes to every other kind of fear, for it is one of the chief expressions of neurasthenia, and a sense of weakness invites, as a sense of strength and vigor dispels, any and every fear. Fears are indeed inversely as the sense of strength, and rest brings the maximum, and exhaustion the minimum, of fearsomeness, so that the intensity of pet fears is one of the best indexes of the degree of fatigue. Sleeplessness caused the defeat of Jeffries, the pugilist, by the colored champion Johnson, and it has caused endless defeats and panics in war, failures in business, loss of courage and nerve in every strenuous occupation. It is probably the chief cause of "helmet" and other headaches, the hysterical nail, sore-

ness in the scalp and spine, intensification or sometimes reduction of reflexes, and it may bring disorders of speech or writing, modifications of the voice and even mutism, paraesthesia, loss of control of attention, self-control generally, and even memory. It sometimes brings a dread of vertigo which may obsess life and a sometimes rather radical readjustment of the relations and proportions of the subjective and the objective. Phobias of madness are commonest in this group but there may also be phobias of committing suicide, as well as of doing outré, criminal and even indecent acts, by a sudden impulse. Such phobiacs are often absent-minded, they cannot collect their ideas, e. g., to write a letter or to keep up an intelligent conversation, and perhaps, especially if they are physicians, they spend hours in examining their pupils, listening to their hearts, testing their sensations, reflexes, while others devise in systematic detail methods of identification in case of death or syncope, prescribe how they should be taken home, treated if they lost consciousness or if some dread disease should suddenly befall them.

Emotion may thus act on the organism very like an infection or intoxication. If convinced that sleep or food do them no good, both really do them less than they would otherwise. If convinced that they breathe badly they may have a phobia of lung tuberculosis, and if any real disease really begins, its symptoms are aggravated and its course accelerated by phobias. If a neurasthenic has any disease he always has also an obsession of it, which may be more dangerous than the disease itself, and as we saw, if the organic trouble is cured its functional manifestations often last on. Phobiac diseases thus are often grafted on to the slightest and most episodic real disturbances and the patient suffers on from memory and continues to nurse himself for a disease which has become purely mental. While emotion and shock may produce many real symptoms, simulation may produce far more, and even other symptoms, and these effects of simulation may be more logical and more like reality than real diseases, being indeed often too true to theoretic type to be true to fact. While the hysterical never worries or fears about symptoms, the neurotic always does so, but here again the best of all methods of testing functional from organic disorders is that of psychotherapy, which may cure the former but not the latter.